The **future** of **interactive** entertainment
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EDGE

Sony ■ Sega ■ Nintendo ■ 3DO ■ PC ■ Amiga ■ Atari ■ SNK ■ Arcade ■ NEC ■ CD-i



Earthworm Jim: can Shiny's 16bit upstart break new ground?

PlayStation and Saturn: **Edge** unveils first softs

Issue **thirteen**

13

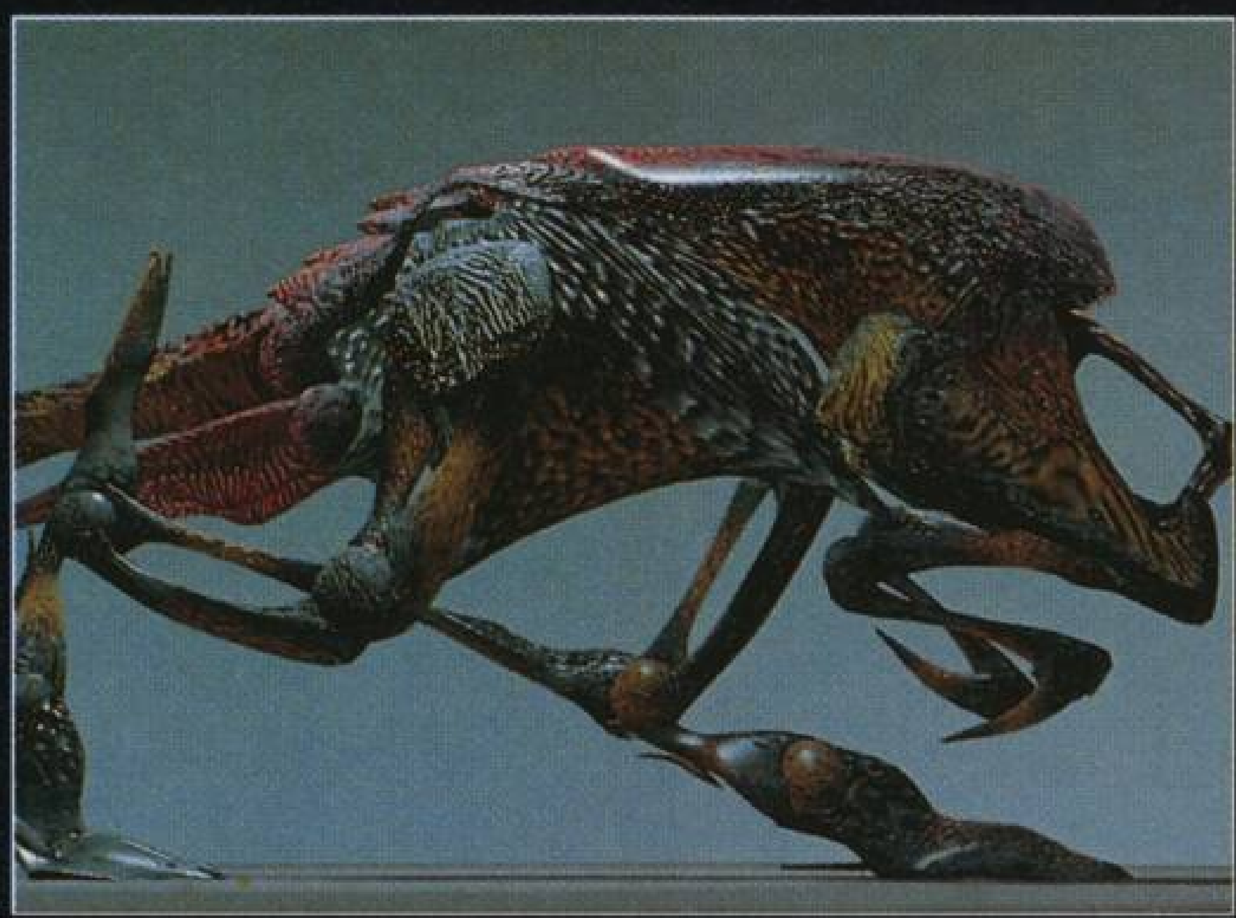
Voted **Magazine of the year**
industry awards

This image was rendered for Edge by SoftImage's Tim Stephen. *Earthworm Jim* arrives on page 54, and a conversation with its creators, California's Shiny Entertainment, appears on page 90

Future Publishing

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EDGE



The image generation: creative power to the people?

This year's Siggraph show proved that the art of computer graphics continues to be refined. Just when you think you've seen it all, an artist with the power to shape worlds, create lifeforms, bend physics and sheer reality through 90 degrees comes along and pushes the envelope back just that little bit further.

Currently, the computer holds the key to human imagination. As rendering approaches realtime and interfaces become more intuitive, the computer will continue to expand the boundaries of our vision. Voyages of ethereal beauty, creatures of unnerving realism, scenes that simply betray belief – all these things and more will soon be within the grasp of anyone with the imagination and the hardware.

True, art has done this for thousands of years: but you can't walk into a painting; you can't watch a sculpture evolve before your eyes; and you can't make a static dinosaur walk and live and breathe.

And the power to do this is tumbling down into the hands of the common computer owner. Already any Amiga user with a hard drive and six meg of memory can run *Lightwave* – the same program that created the effects for Babylon 5 and SeaQuest DSV.

Also, within a few years, the computer will be the standard tool for movie special effects. Bluescreen photography has already been replaced by digital compositing; stop-motion animation has given way to 3D rendering; and prosthetics are now playing second fiddle to computer-generated images. Even the art of matte painting is being usurped by the ability to create whole landscapes in photorealistic 3D.

And it won't be much longer before the acting profession have to start lowering their rates…

The **future** is almost here…

inside EDGE issue thirteen

Voted Magazine of the year
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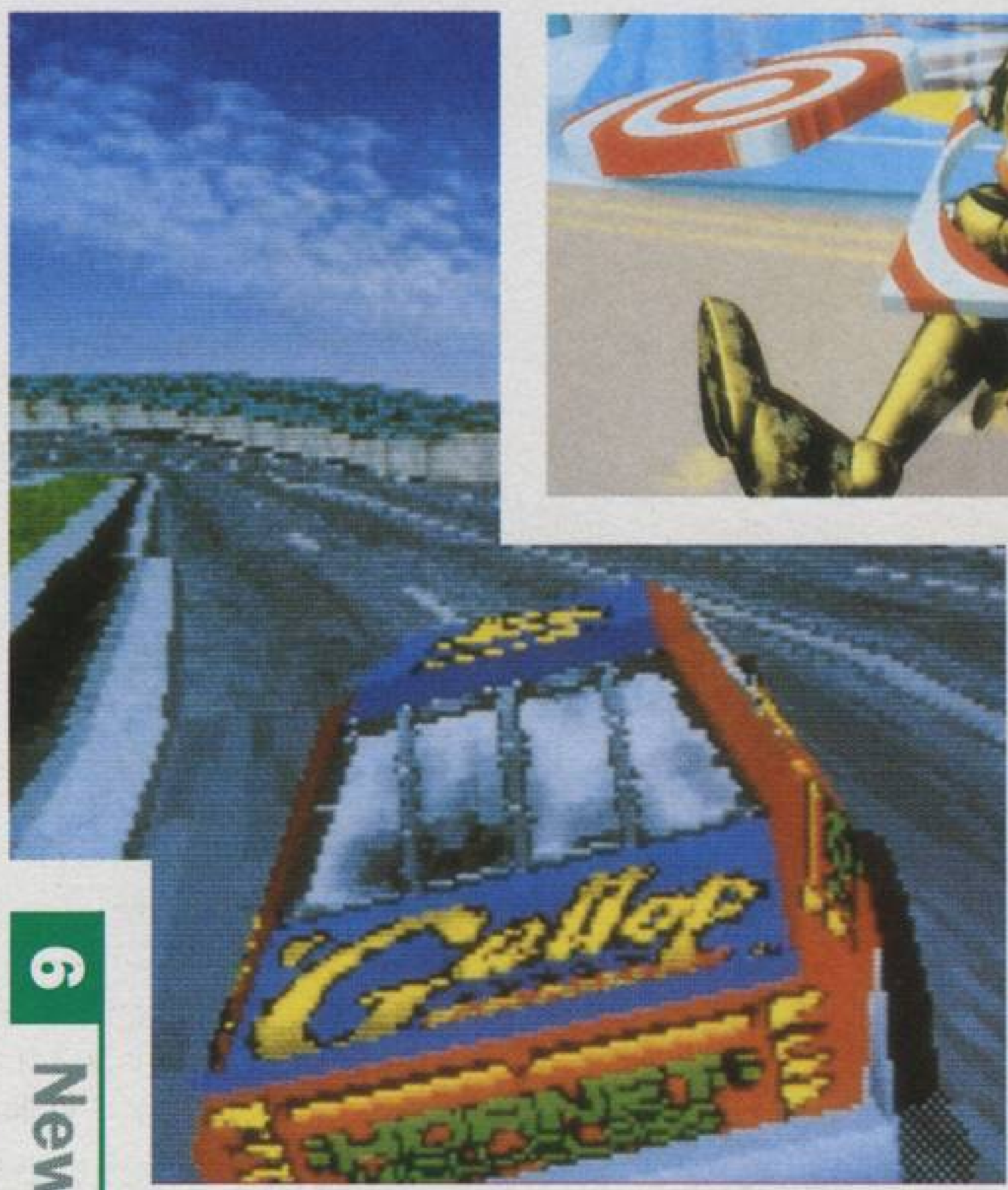
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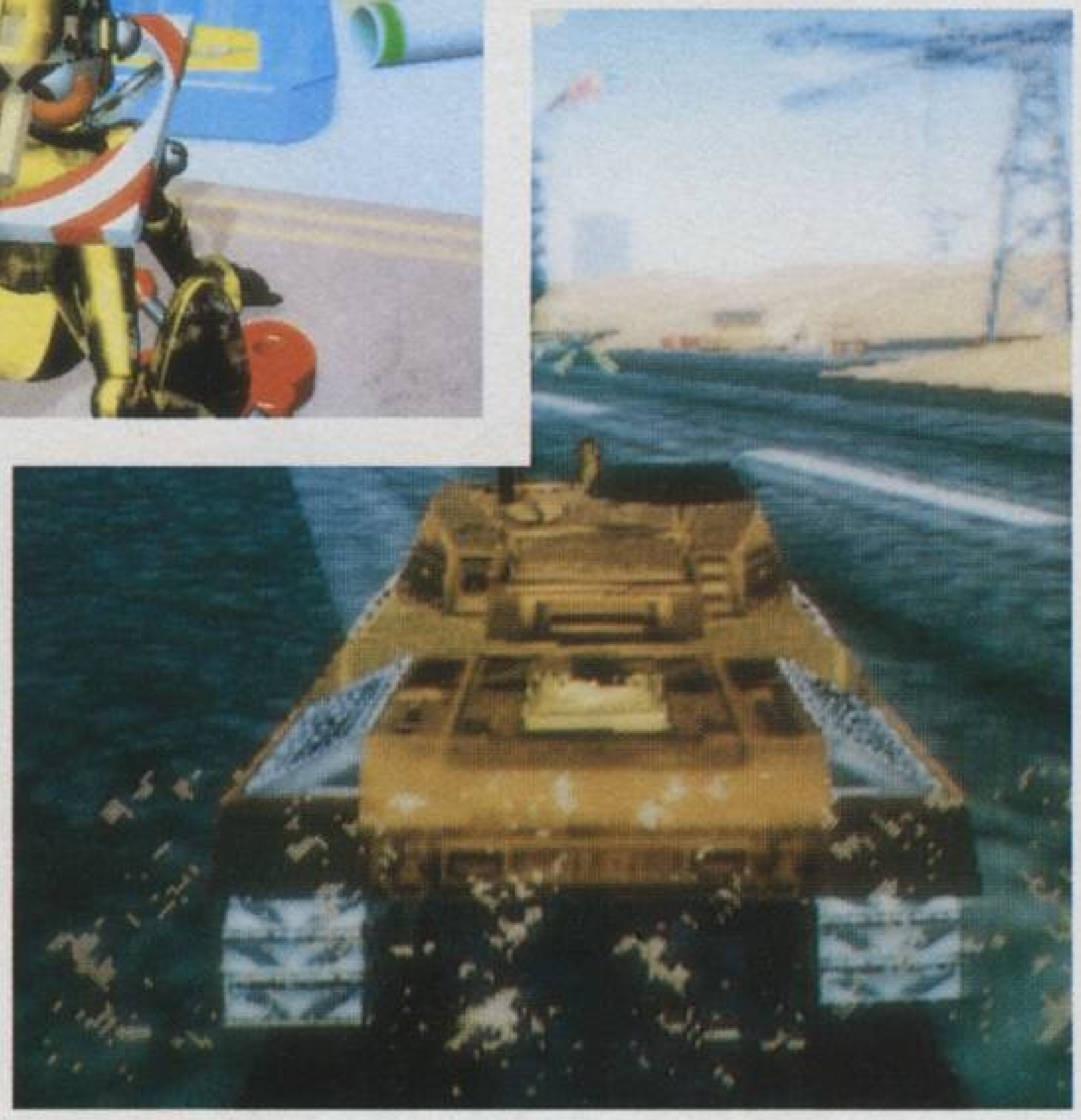
Cover

Cover Image: Earthworm Jim
© Shiny Entertainment
Rendered by: Tim Stephenson and Phill Avanzato at *SoftImage*, Montreal

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It's not a tawdry show (is it?)







Daytona (far left), ***Clockwork Knight*** (left) and ***Desert Tank*** (below)







insideview



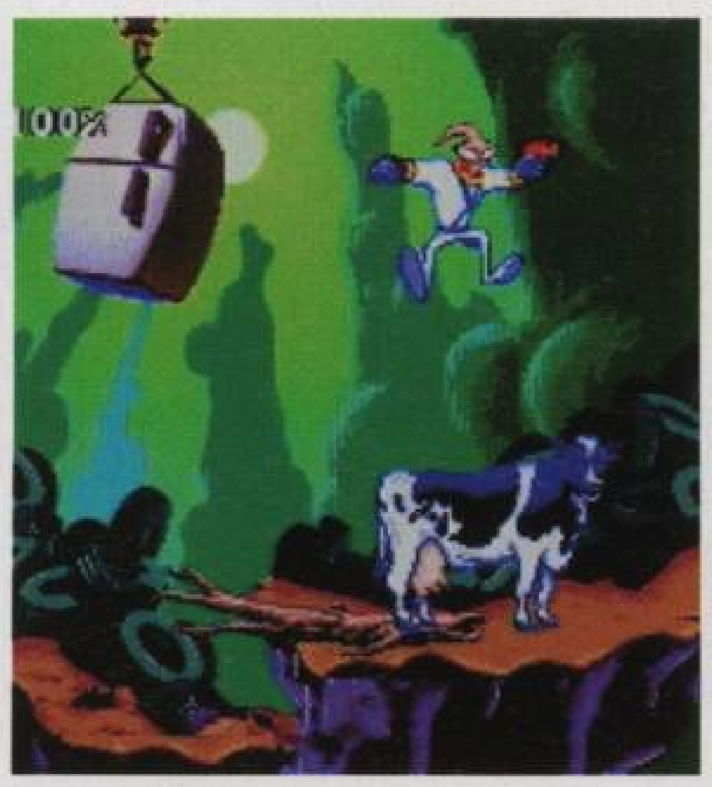

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Little Big Adventure (left) and ***The Need For Speed***

26 **Pre**screen

Earthworm Jim (left) and ***Road Rash***




Testscreen **47**




Photography: **Tony Le Mesmer**

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Cutting **Edge**

The latest **news** from the world of interactive entertainment

PlayStation: Sony reveal **gameplan**

The first PlayStation software was recently revealed to the Japanese press. Edge spent a day in the company of Sony

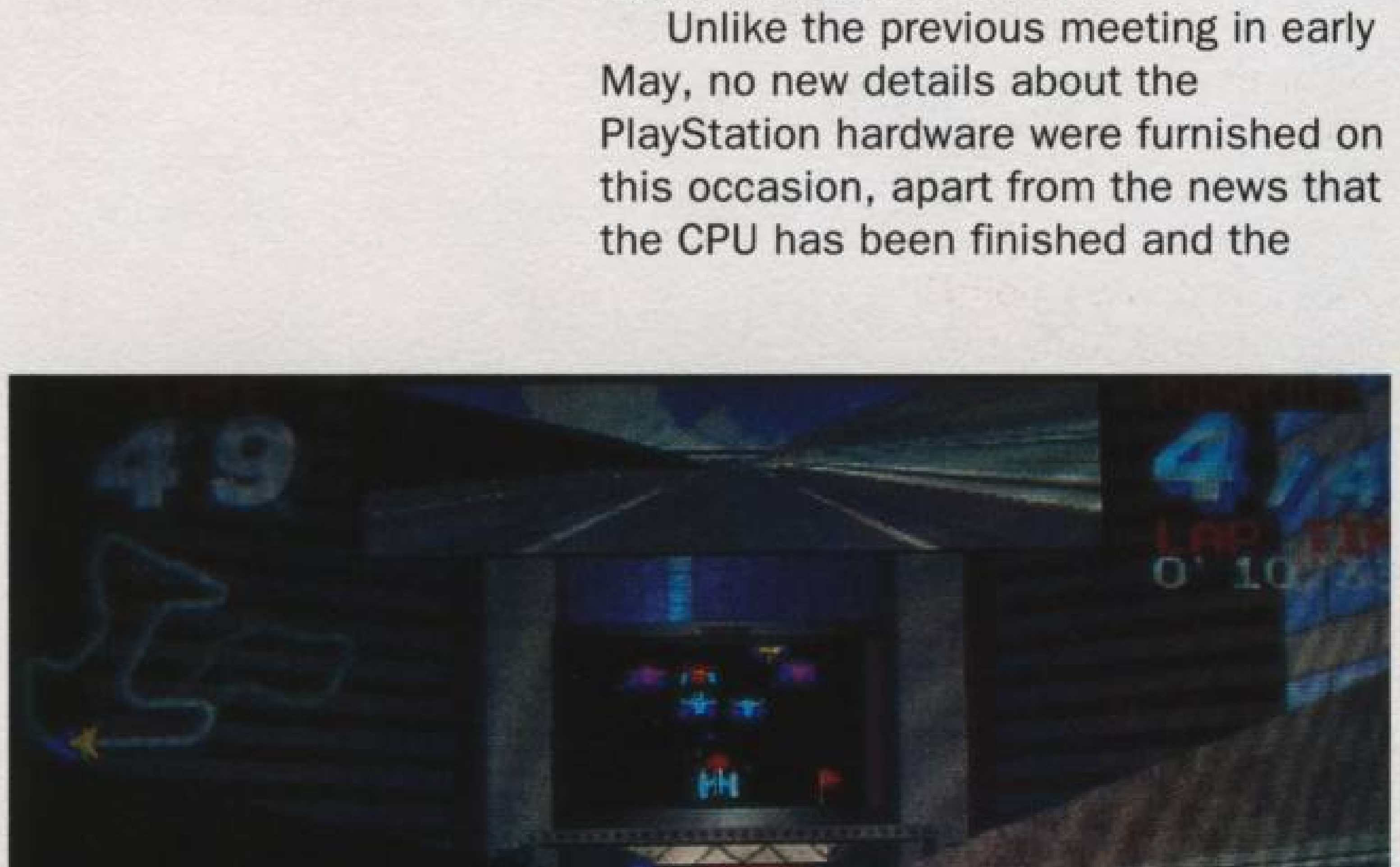
Sony's prelaunch strategy for the PlayStation in Japan is to focus on software. The company recently held their second press event in Tokyo, during which Japanese games journalists (and **Edge**) were invited to see the preliminary line-up for the highly anticipated console.

Unlike the previous meeting in early May, no new details about the PlayStation hardware were furnished on this occasion, apart from the news that the CPU has been finished and the system is now ready for manufacture. 'We've completed the prototype stage,' a Sony official told **Edge**. 'All we have to do now is set up the mass production system before we can go on sale.'

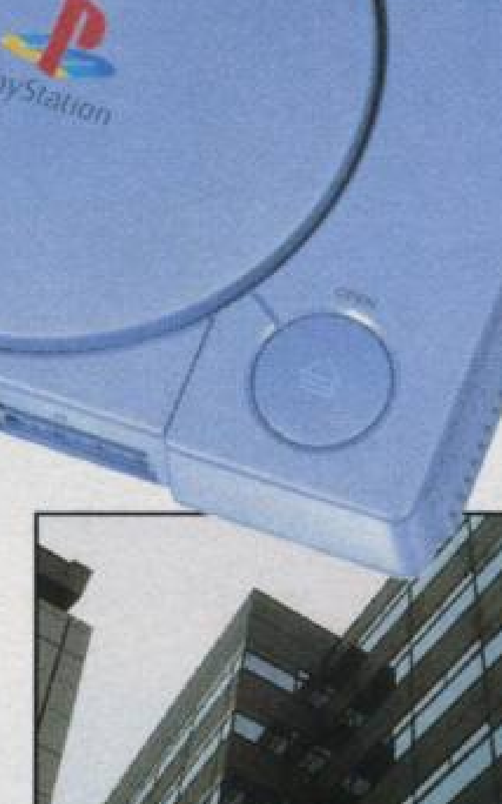


The R3000A CPU (a MIPS-designed RISC chip that is already widely used in the computer sector) is now incorporated in a custom chip that also includes both the 3D coordinate algorithm processor (aka GTE) and the image data resolution processor. This is the result of a joint development between Sony Computer Entertainment and chip manufacturers LSI Logica, and, according to **Edge**'s source, it means that the PlayStation will offer even greater performance than previously thought. 'It's so powerful now,' he quipped, 'that we almost feel we should lower the performance.'

Although Sony's hardware expertise is beyond question, doubts have been expressed in Japan about the number of titles that will be available at launch. Sony's preview of software in development took place in a large room containing rows of PlayStation development systems as well as a few finished units. 13 games were →



Namco's PlayStation *Ridge Racer* will include the link-up feature seen in *Ridge Racer 2* (arcade shot, above). A steering wheel is also planned



SCE's Akasaka Oji building in Minato-ku, Tokyo, where Edge played the first softs

→ presented throughout the day; unsurprisingly, the most advanced titles were from Sony themselves, notably the polygon racing game, *Poly Poly Circus Grand Prix*, and a shoot 'em up entitled *Philosoma* (previously known as *Ora-194*).

According to *Poly Poly*'s producer, **Kazunori Yamauchi**, racing games are 'the best genre to show off the capabilities of the hardware. Our ambition is to make this the world's best polygon racing game.'

The shoot 'em up, *Philosoma*, is more standard fare but does include some breathtaking special effects. It offers vertical and 3D sections as well as horizontal scrolling, and some nice scaling effects.

Anyone expecting to see *Ridge Racer* or any other Namco PlayStation projects was disappointed; the company chose not to make any revelations, but Namco are known to be converting *Ridge Racer* as a PlayStation link-up game (a steering wheel accessory with proper feedback will also be available for lovers of the arcade experience). Those who've seen the PlayStation version in its current state claim that it's not arcade perfect but is still impressive.

Sony's event also gave **Edge** the first chance to try out the PlayStation's stylishly ergonomic controller (see **Edge** 11). Apparently, the pad – which nestles very well in the hand – was one of the hardest aspects of the system to design; a final version was only chosen after ten different prototypes had been tested.

During the day, **Edge** also took the opportunity to look at the rear of the machine. Besides the serial port for link-up, and S-Video and Composite sockets, the PlayStation also includes an RGB socket, and a small plate conceals an expansion socket for connection to a hard drive or modem.

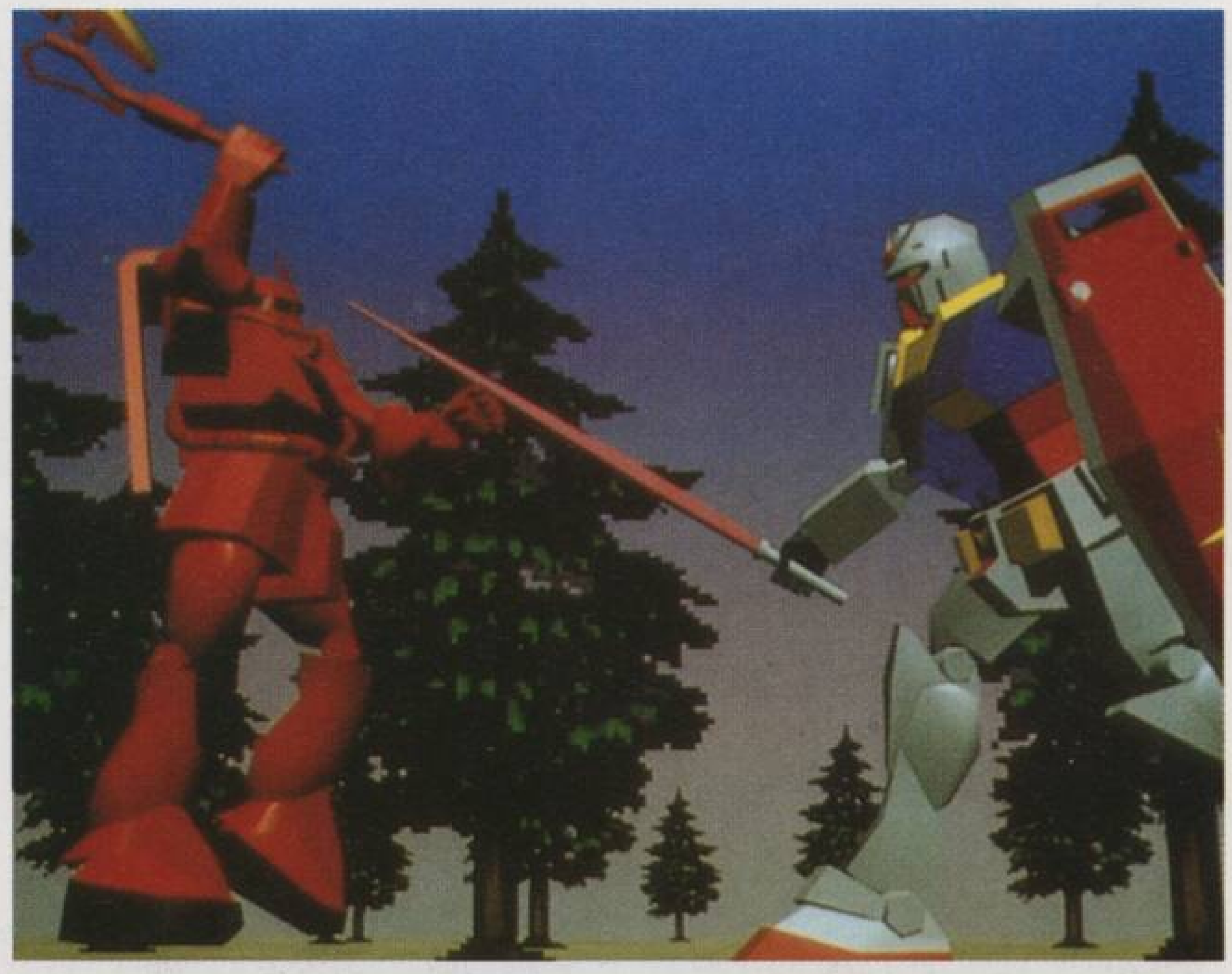
With the Japanese release of the PlayStation now pencilled in for December 9, only one small detail remains shrouded in secrecy: the price. A Sony spokesman recently told **Edge**: 'It will be less than ¥50,000 [£320], and not close to ¥50,000.' Potential PlayStation owners will just have to be patient.







SCE's *Philosoma* mixes both horizontal and vertical scrolling (top) with smooth 3D sprite scaling (above). Rendered cut-scenes provide a stunningly seamless transition (centre)



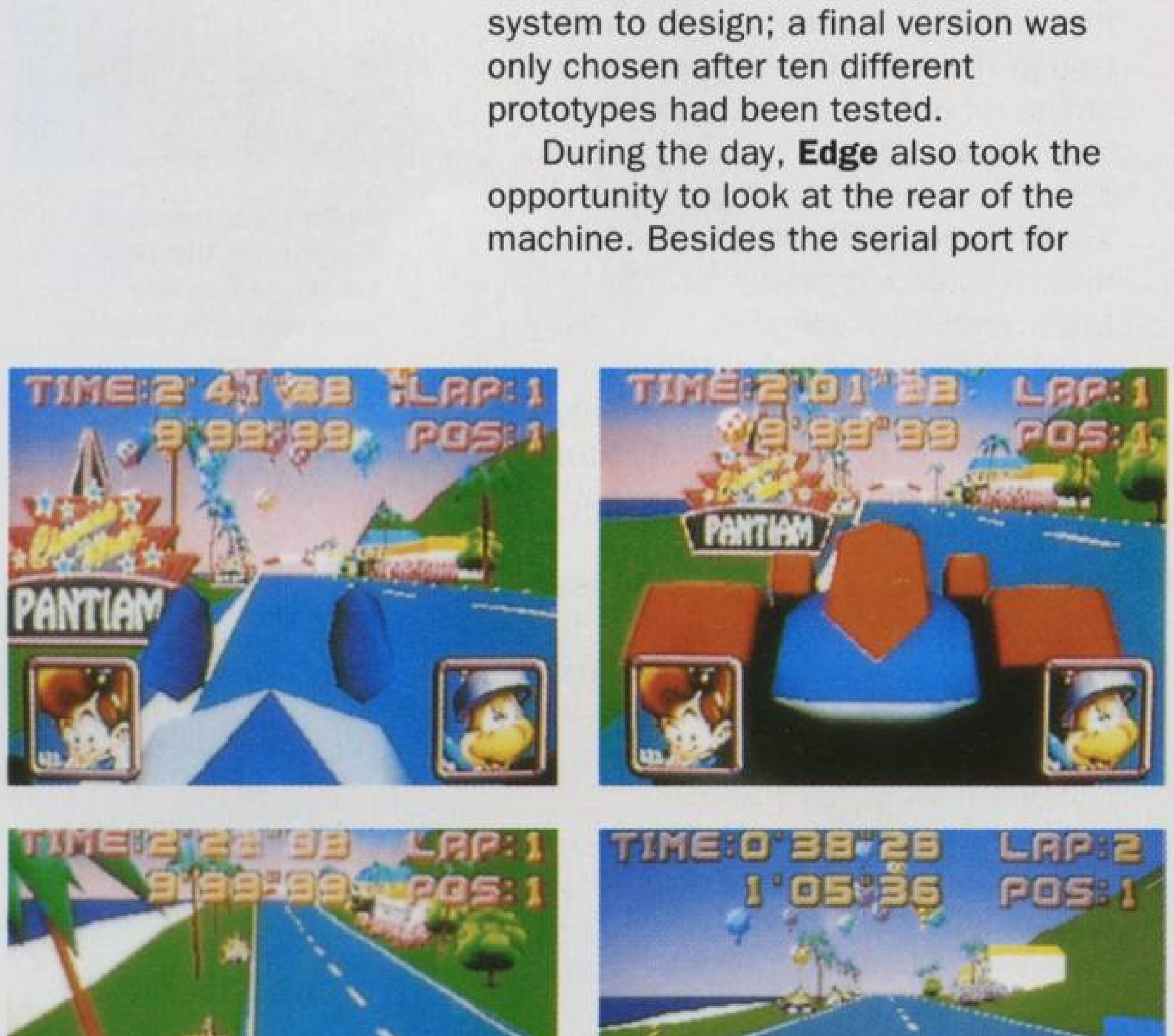


Bandai's *Task Force Warrior Gundam* (top) features shaded polygons, while Konami's *Ultimate Parodius* (above) relies on good old-fashioned sprites

PlayStation software

At Sony's press conference Edge saw 13 different titles running on the PlayStation. A few, including a couple of polygon-based beat 'em ups, were shown but not allowed to be photographed. The remaining titles were:

Task Force Warrior Gundam (Bandai)
Ultimate Parodius (Konami)
A.IV (Artdink)
(see page 38)
Metal Jacket (Pony Canyon)
(see page 27)
V-Zone (SCE)
Crime Crackers (SCE)
The Tale Of Poporokuroisu (SCE)
Aquanaut (Artdink)

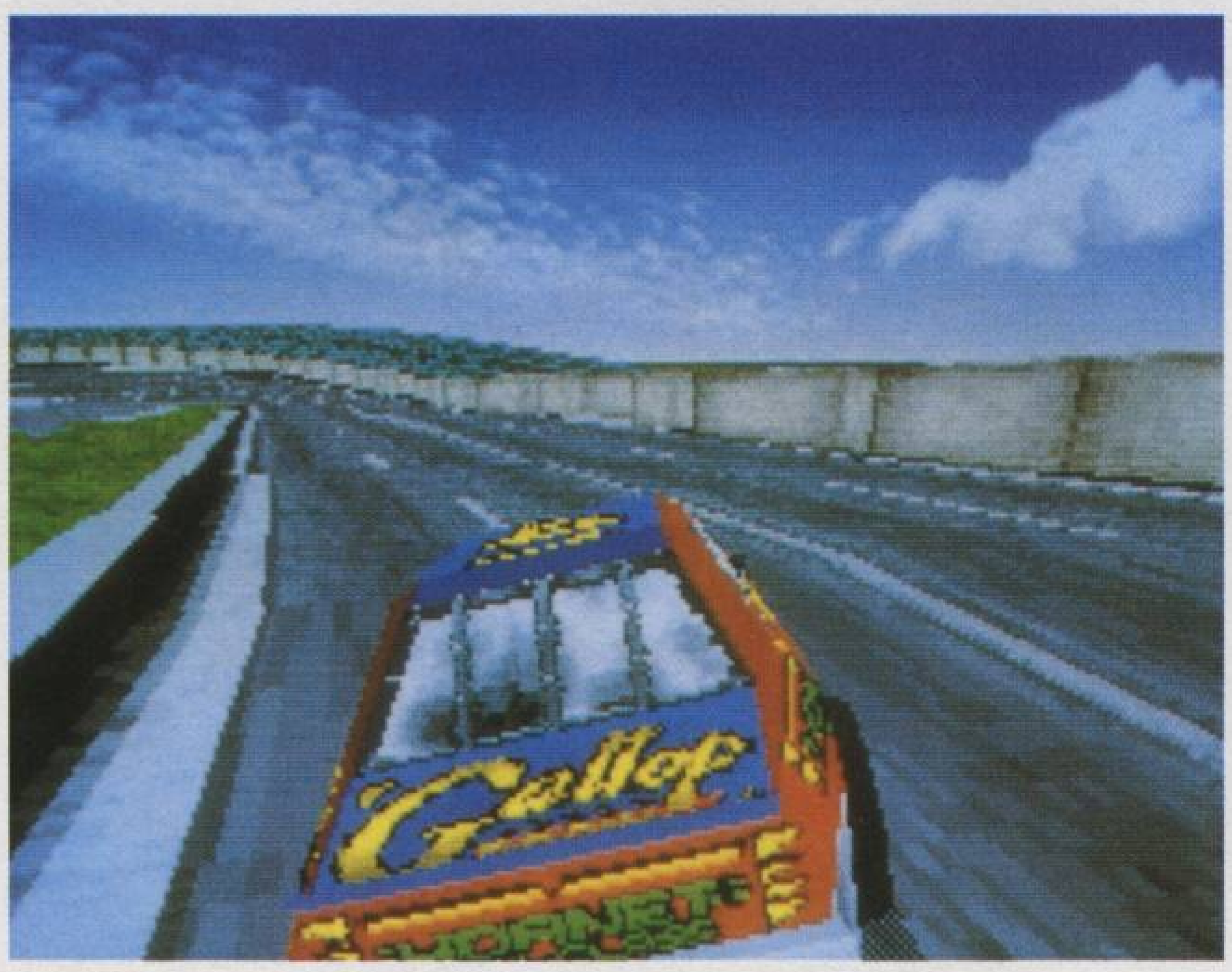




SCE's *Poly Poly Circus Grand Prix* features some exceptionally smooth polygons (60fps) and five different viewpoints. The finished game will include four different courses, five different cars, and, best of all, a head-to-head option in which two PlayStations can be linked together for play on two TV sets

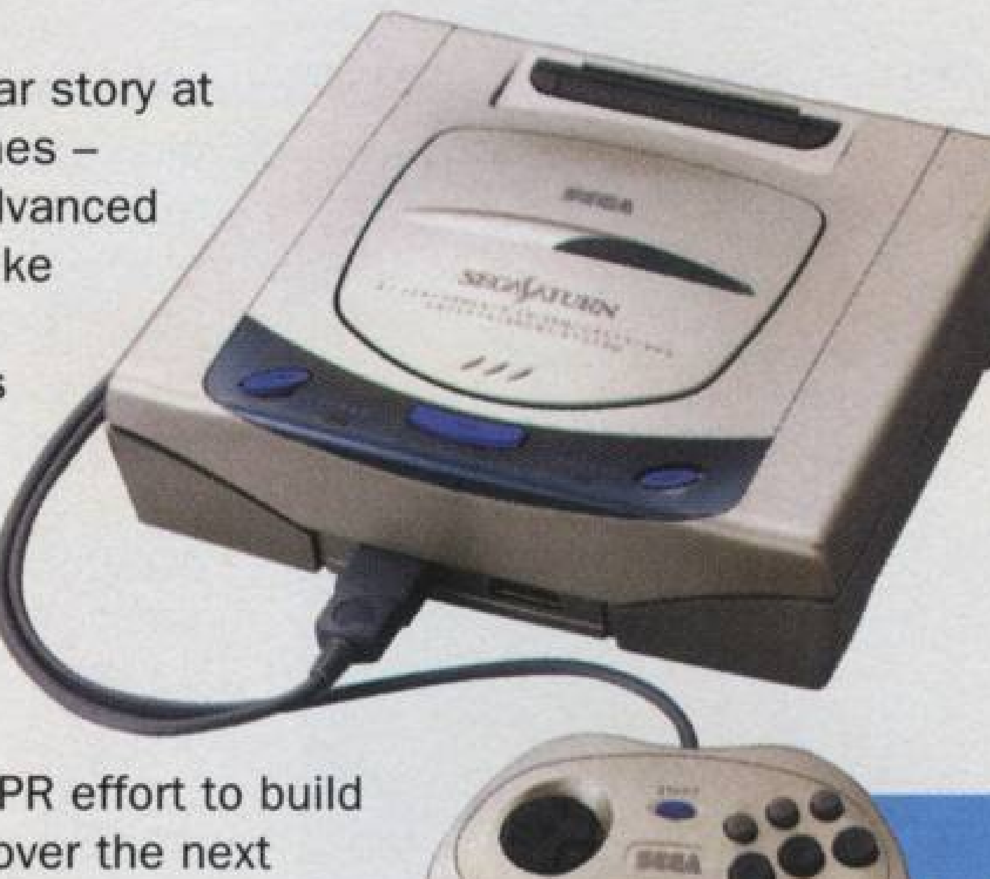
Sega on track with **Saturn**

The Japanese Saturn launch is approaching fast. Edge flags the titles that will make the machine



***Daytona USA* is looking good, considering that it's only 10% complete. The game won't make it out in time for the launch**

The roll-out of Saturn at the Tokyo Toy Show in June (**Edge** 11) raised doubts in some minds about whether Sega would be able to pull off the launch in time for November. Software was teething badly, few titles were playable to any recognisable degree, and all the controllers were attached to walls hiding bulky development stations rather than Saturn units. Of course, this has been a familiar story at many hardware launches – things are rarely as advanced as companies would like them to be.

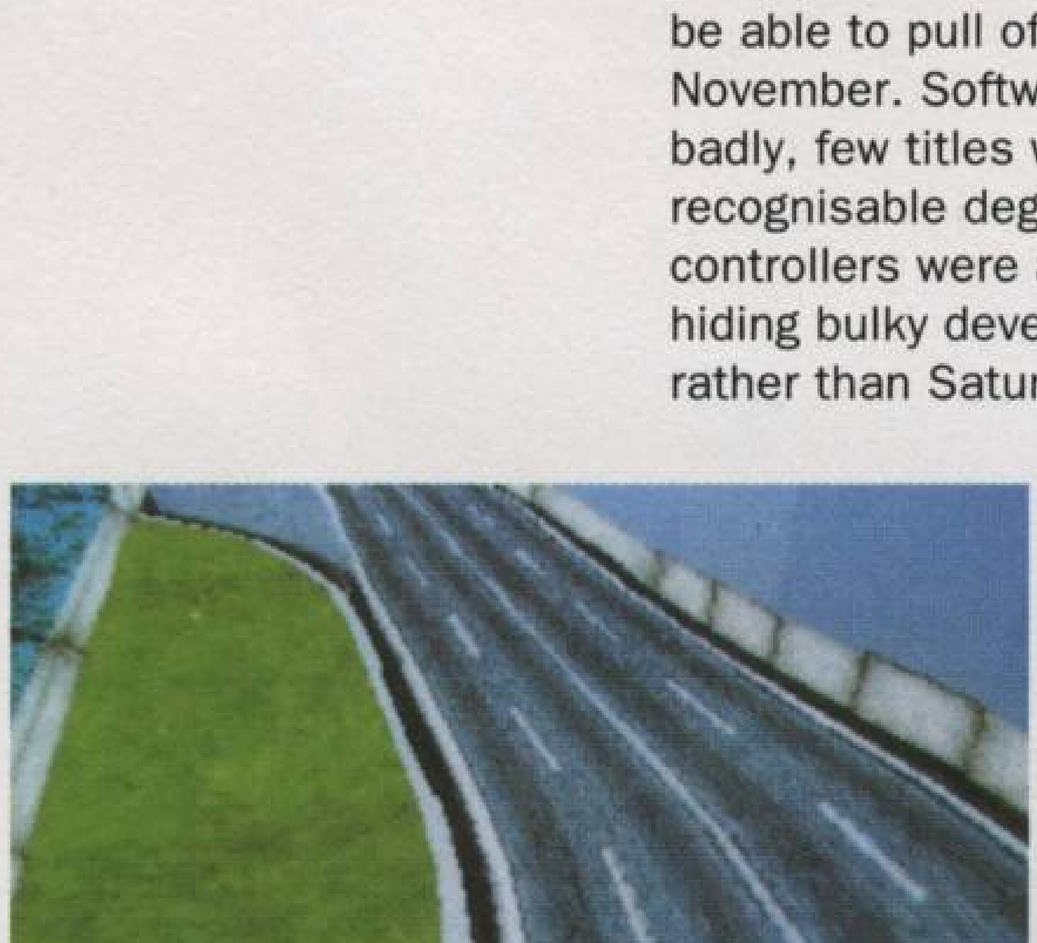


Now, a few months down the line, Sega are in a position to start showing off some prime development projects. A central component of Sega's PR effort to build up Japanese support over the next couple of months is in-house coin-op division AM2, headed by Yu Suzuki. AM2 are currently converting the overwhelmingly popular (in Japan, at least) *Virtua Fighter* to the system, and work also on the Saturn version of the exemplary polygon shifter *Daytona USA* (shown here in its 10%-complete form) also began recently. Showing off titles at such an early stage of development is a crucial part of Sega's prelaunch strategy in Japan. Giving specialist gaming magazines the opportunity to trace the progress of popular arcade titles like these is one way of ensuring that fans of the arcade games stay interested, and hopefully buy the Saturn when it's launched.

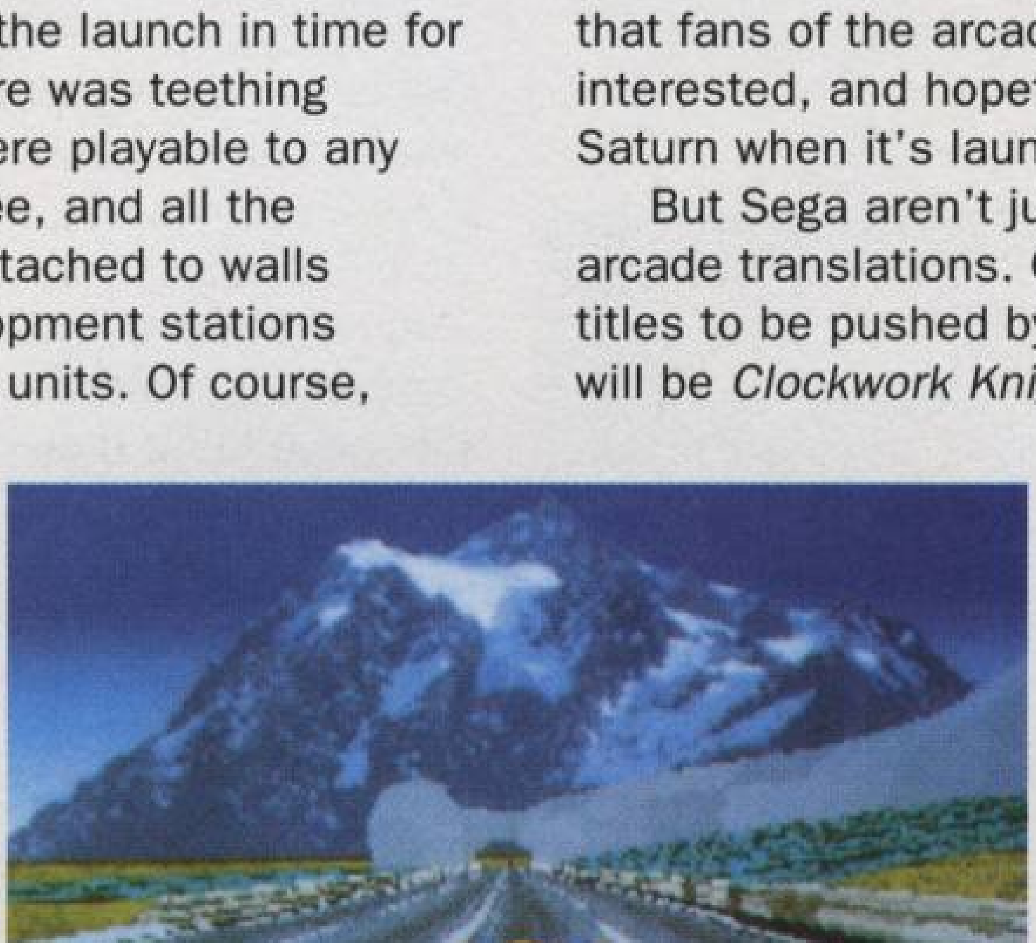


Sega's amusement division in Ohta-ku, Tokyo, is heavily involved with Saturn

But Sega aren't just relying on arcade translations. One of the biggest titles to be pushed by Sega at launch will be *Clockwork Knight*, a game which →



Sega have plans to include a *VR*-style aerial perspective in the Saturn version of *Daytona*



It's possible to link up six Saturns – no doubt Sega will take advantage of this in *Daytona*



***Daytona* will push Sega's hardware to the limit – this rock face needs texturing, for a start**

➔ has been in development at Sega Of Japan for over a year. All the graphics seen in the game have been rendered using SoftImage's *Creative Environment* tools running on Silicon Graphics – an early SGI demo of the game was used by Sega's marketing department to sell the console to developers (and tease delegates at the Winter CES).



A pivotal factor in the development of software for Saturn is Sega's Titan arcade board. Titan has been developed primarily as a hothouse for arcade games which can then be quickly and easily ported over to the Saturn (the first title will be *Golden Axe: The Duel*). As such, it shares much of the Saturn architecture while boasting a bigger memory and an even better sound board (Saturn's Yamaha sound board is one of the best around, by all accounts).



***Virtua Fighter* (above) is 40% complete and now includes twice as many polygons as were seen at the Tokyo Toy Show. *Victory Goal* (top)**

Both Saturn and Titan rely on architecture that is essentially 2D-based. Instead of a fully Z-buffered 3D environment, sprites are mapped onto geometry and scaled and distorted. Depth is assigned to the pieces, so it's possible to have walls and other objects scaling away into the distance (as seen in *Clockwork Knight*) and scrolling past in true perspective as the player moves.

178 companies have signed licence agreements with Sega, with the list now including established Sony and Nintendo licensees Capcom, Konami and Namco. As was the case with the Mega CD, other hardware companies will be producing their own versions of the Saturn: only recently Hitachi announced that they would be manufacturing a Saturn-compatible machine, and it's thought that JVC (who are also involved with the production of the standard machine) will also turn out their own version, rather like the Wondermega and X'ye Mega CD combo.

With the Saturn now expected to hit Japanese shelves within a week of the launch of the PlayStation (probably beforehand) at a price of ¥49,800 (£320), Japanese players now face a tough decision. Of course for those with enough yen to spare, it will be no problem at all...









***Clockwork Knight*: Sega's flagship platformer, featuring 3D backdrops and some spectacular animation and character design, looks like one of Saturn's strongest launch titles. Set in a big American country house, the game features a wind-up doll as its central character**

Who is it?

This man is spearheading the effort to confound the sceptics in the forthcoming battle for Christmas console sales. The price of the machine has now been set and you can buy one on the high street today



***Panzer Dragoon*, Sega's 3D shoot 'em up, is another launch title that should turn heads**

Model 2: **Sega's second** wave

While home gamers wait for the Saturn, Sega's arcade programme continues apace

it is...

Sam Tramiel, president of Atari. The Jaguar represents his embattled company's last chance of survival in a hostile environment. A marketing campaign is being launched soon to convince punters to plump for the big cat

As Sega Of Japan start firing up their hype machine in readiness for this November's assault on the Japanese console market, AM2, the company's coin-op development division, have unveiled their latest consignment of arcade games (incorporating both Model 1 and some Model 2 technology). With 3D technology now penetrating to all corners of the coin-op industry, Sega can't afford to rest on their laurels.

Two games rolled out recently for Japanese arcade fans were *Desert Tank* and *Wing War*. *Wing War* throws prospective fighter pilots into the cockpit of a variety of different aircraft, while *Desert Tank* players find themselves at the controls of a tank in the middle of a sandy skirmish.

Desert Tank is the second game to use Martin Marietta's texture-mapping board, one of the central components of the Sega Model 2 IG (image generation) PCB that powers *Daytona USA*. This technology, which can handle around 300,000 polygons per second, offers greater 3D performance than any current coin-operated amusement hardware.

Not as impressive, but still firmly at the leading edge of low-end IG technology, is Sega's Model 1 board, which was first used in *Virtua Racing* and now provides the polygon generation for *Wing War*. This system allows you a certain degree of freedom to roam within a set perimeter (shown by the radar), but essentially you're flying on rails – Nintendo used a similar system in *Starwing* on the SNES.

Other Model 2 games currently in development include the follow-up to →



Sega's Model 2-powered *Desert Tank* boasts stunning visuals and allows the player to view the action from one of three viewpoints





This view (inset) allows the player to gauge exactly what's happening ahead. The cockpit view (above) is useful for close-quarter combat



***Desert Tank* uses a restyled *Daytona* cabinet complete with huge screen**

Capcom console

Arcade giants Capcom are rumoured to be developing a home console based on their aging CP coin-op system. It's thought that Capcom are delving deep into their back catalogue of hits and converting some of them onto Mega Cartridges. These will feature on special multiplay arcade machines (similar to SNK's Neo-Geo MVS arcade boxes) and will also be pushed as software for a home system, possibly early next year.



Sega's 60%-complete ***Virtua Cop*** **(above), in which players have to try and infiltrate enemy hideouts, uses the same technology (Model 2) that helped make** ***Daytona*** **such a huge success**

→ *Virtua Fighter*, as well as a *Galaxian*³-style space shoot 'em up, and a motion-based game incorporating Sega's VR1 system which represents the company's attempt to break into the VR entertainment market.

Sega are also using the Model 2 board for their next big 'Virtua' coin-op, *Virtua Cop*. In this game you take the role of a Robocop-style law enforcer, infiltrating texture-mapped enemy bases. Currently only 60% complete, the game includes a full polygon landscape and even polygon-based enemies. Lousy scenario, predictable gameplay, but incredible graphics.

A full report on all the latest developments in the arcade entertainment field will appear in issue 15, when **Edge** reports from the JAMMA coin-op show at the Makuhari Messe in Chiba, Tokyo.





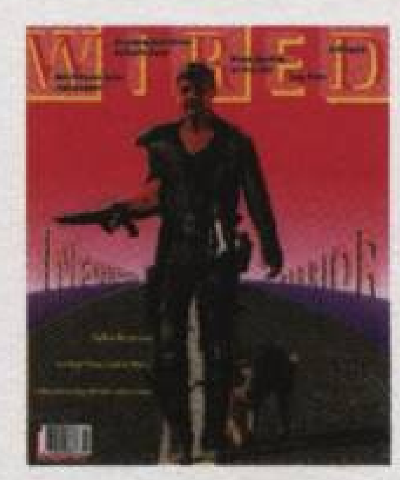
Two players battle for control of the skies in Sega's Model 1-based ***Wing War*** **(above). The game is already number one in Japan**

Essential reading

For most of us, there are computers and there are computer games. The first are interesting (usually) because they deliver the second. The second are interesting in their own right (naturally). Being sensible, rational creatures, we know that games are fun and the rest is useful. And then, of course, there are the Americans...

Wired and Mondo 2000 (from selected newsagents) are manuals for the California computer 'culture'. Both magazines presuppose that such a dreary phenomenon exists: a social group whose lifestyle, language and customs revolve around the currency of computers. But more than this, both attempt to bestow on this group an aura of radical chic, promoting its members as digital warriors plugged into the IT zeitgeist while the rest of the world languish in outmoded ideas.

Wired

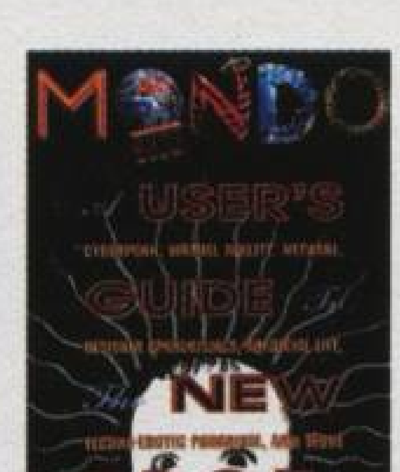


- **Published by Wired USA**
- £3.75 (e-mail: subscriptions@wired.com) ISSN 1059-1028

Wired, at least, is serious, offering a good array of interviews, product splashes and general techno-paraphernalia covering every conceivable sector of the (sometimes very boring) business and consumer computer market.

Wired oozes a terminal self-consciousness, from the Mac masturbation of the design, to the smug jargonising, to the fact that all mail must be e-mail or be consigned to the cyberbin. It's erudite, stylish and dynamic, and has become the de rigeur accessory for the digitally fashion-conscious, but there's still too much that's just a neo-conservative pose – Val Doonican dressed in a data-suit.

Mondo 2000



- **Published by Fun City MegaMedia**
- US$5.95 (e-mail: subscriptions@mondo2000.com) ISSN: 74470 77997

Mondo 2000 is plain scary: an impenetrable kaleidoscope of drug-skewed philosophy, pixel-art and Net surfing for a readership that's probably booked wholesale for cryogenic burial (along with the magazine). Doubtless someone, somewhere thinks that the random agglomeration of holographic clothing, tytamine hallucinogens and polygonal love dolls adds up to more than a good old laugh. They're wrong. And the publication of Mondo 2000's User's Guide To The New Edge (Thames & Hudson, £12.95, ISBN 0-500-27749-4) only makes matters worse. This lavish volume which seeks to explain the mag's crazy credo should come with a large sticker reading, in naked capitals: IGNORANCE IS BLISS.

Siggraph: visions of the future

Edge watches the big names of the computer graphics industry show off





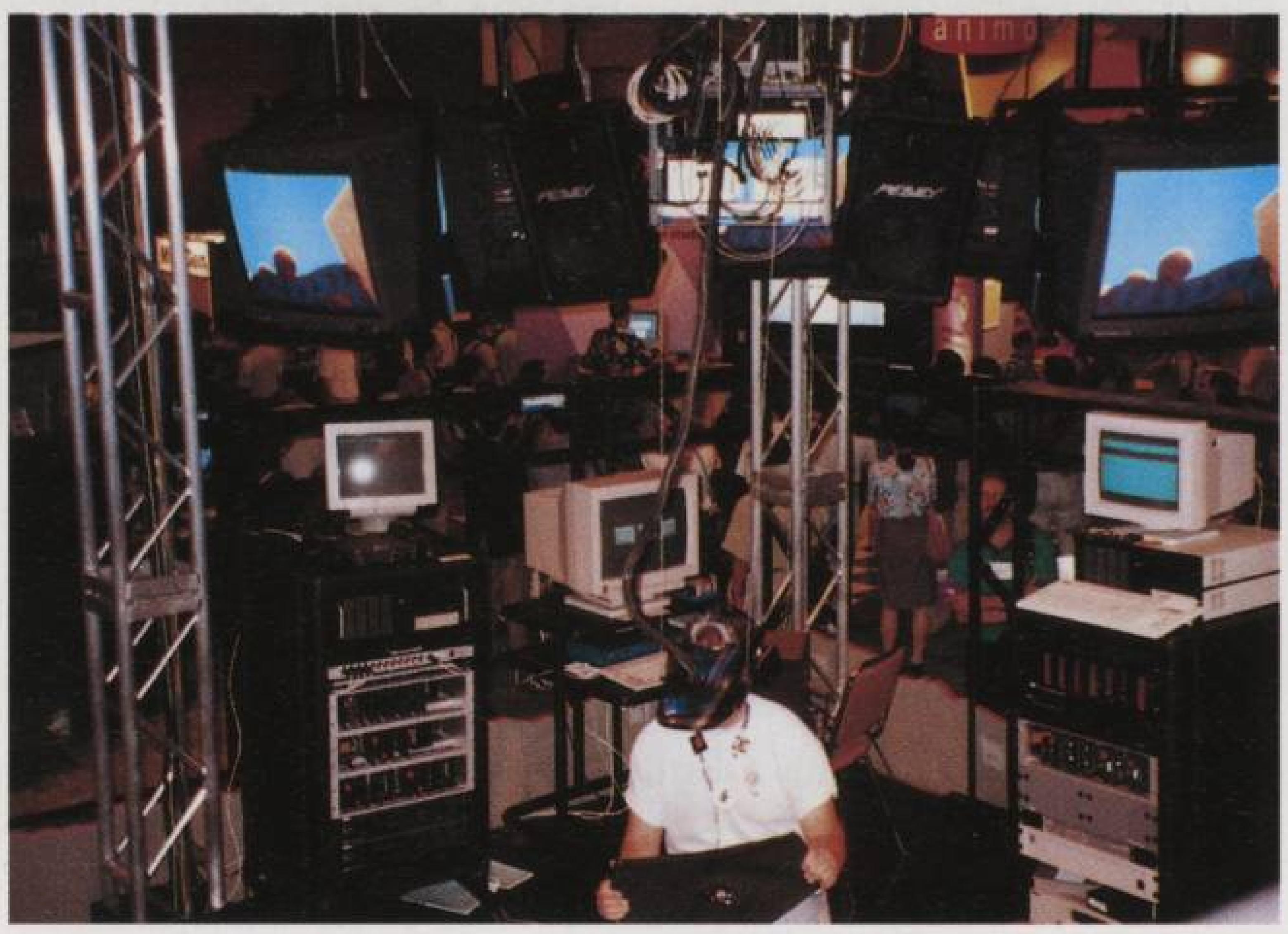




E&S' stunning realtime animations included *Save Nessie's Eggs* and *Midnight Manor*

For anyone even remotely interested in the future of computer graphics, the annual Siggraph show is unmissable. Now in its third decade, the **S**pecial **I**nterest **G**roup in **Graph**ics event is the traditional showcase for developments in IG (image generation), and with new players having entered the field in the last few years, 1994's Orlando show was widely regarded as the best ever.

Over 250 companies exhibited this year, covering every aspect of 3D animation, interactivity and virtual reality. What makes Siggraph special is its scope. Unlike the Tokyo Toy Show or the CES, the action at Siggraph doesn't all take place on the exhibit floor. There are myriad behind-the-scenes events, including seminars, classes, the Electronic Theatre, viewing rooms, art exhibits and special areas that demo cutting edge technologies rather than marketable products.



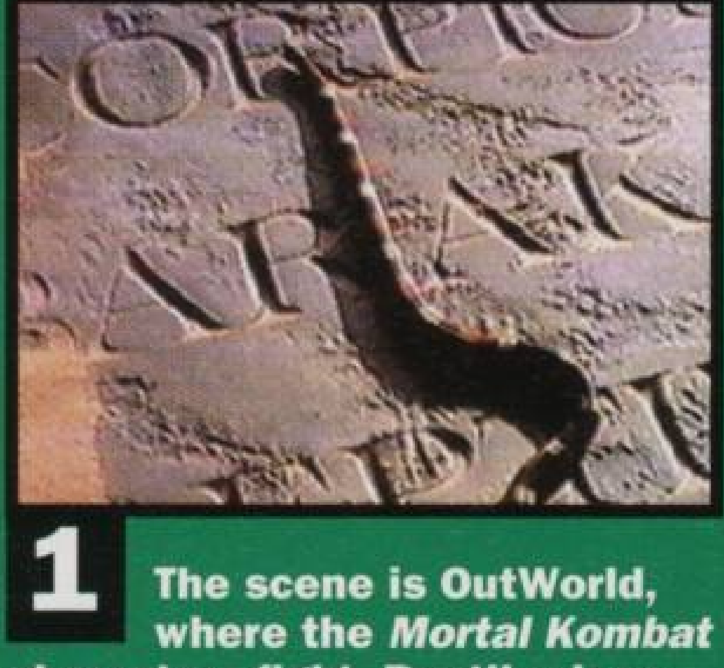
This VR headset and accompanying mass of electronics constitute the gear behind Disney's new ride, Aladdin's Magic Carpet

Think VR

simulators and the name most likely to cross your mind is Evans & Sutherland. Ivan Sutherland almost single-handedly invented interactive computer graphics in the early 1960s, and the company which bears his name is still among the pioneers of high-end CAD systems, military simulations and graphics boards. With the end of the Cold War and the attendant slashing of military budgets, Evans & Sutherland have been forced to seek new markets, and it's the theme park business that is now attracting their expertise. →

Advertainment

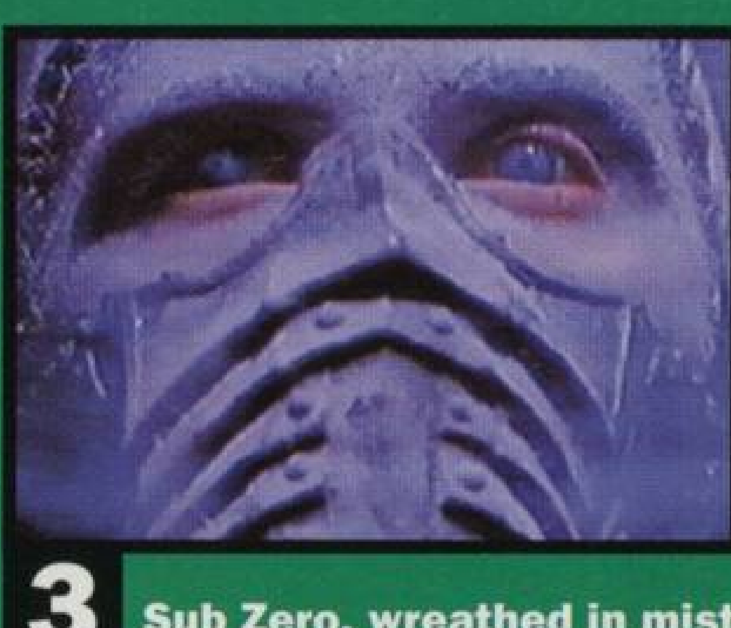
The worldwide TV ad for *Mortal Kombat II* uses a mixture of live action and game clips to portray the personalities of the fighters



1 **The scene is OutWorld, where the *Mortal Kombat* characters fight. Reptile rises from the desert and slithers over a sand-covered tombstone with 'Baraka' carved on it**



2 **The combatants prepare for battle. Close-up of the undisguised Reptile's eye as he tries to outstare Sub Zero. The drumbeats of the soundtrack increase in volume**



3 **Sub Zero, wreathed in mist and encrusted with ice, leaves his snowy domain to face his foes. His haughty demeanour shows he is unmoved by Reptile's attempts to faze him**



4 **The lovely Kitana appears onscreen. A game clip follows, in which she proves that she's definitely not just a pretty face by proceeding to demolish Scorpion with some ease**



Fantasy 500 joins *Ridge Racer 2* and *Daytona USA* in the race for glory. A sit-in unit and 30fps action make it a real contender

IG show for Britain

Later this year, Britain hosts its own equivalent of Siggraph: the Computer Graphics Expo. Taking place at the Wembley Exhibition Centre from 8–10 November, CGE is the biggest event of its kind in Europe and will feature many of the exhibits seen at Siggraph. For further information, telephone 081-995 3632

→ At Siggraph, E&S teamed up with Iwerks to show off the latest version of their Virtual Adventures technology; people queued to experience *Save Nessie's Eggs*, a game built using their Liberty VR system. The action took place in twin five-seater submersible pods, with the crew (commander, pilot, and operators for the claw, periscope and radar) using touch screens and 3D headsets to save the unhatched offspring of the Loch Ness Monster.

Also demoed by E&S (in association with VR Headgear And Software) was *Midnight Manor*. Running on Sun workstations, this haunted house experience was less a game than a tour through virtual space, but it provided effective proof of the power of E&S graphics accelerators.

Confirmation that the military have gained a strong lead in the production of simulations was provided by another military-grade developer, Martin Marietta. Marietta have built on the graphics accelerator used in Sega's coin-op version of *Daytona USA* to create *Desert Tank* (see page 10).

Another IG pioneer is Kubota Graphics, who showcased an incredibly realistic networked race game featuring sit-in racing car bodies and smooth 30fps texture-mapped graphics. Imagine *Crash 'n Burn* running on an Onyx and you get the idea.

The other game in the Kubota line-up was *neo-tokyo 2040*. Two players donned HMDs (head-mounted displays) and took to 'motion sleds' to experience a Bladerunner-style escapade in which the female pilot of an advertising blimp embarks on a crusade to rid Tokyo of the scourge of garish advertisements.

British-based Division's VR demos included two military-style simulations: a flight simulator that looked more like a game than a simulation, and a US Army training simulator, from which punters emerged looking like they'd just returned from a Nicaraguan skirmish. Division also exhibited a two-storey virtual house, created with an immersive architectural design tool developed in concert with Matsushita, and a virtual Volvo whose interior could be altered to your own design.

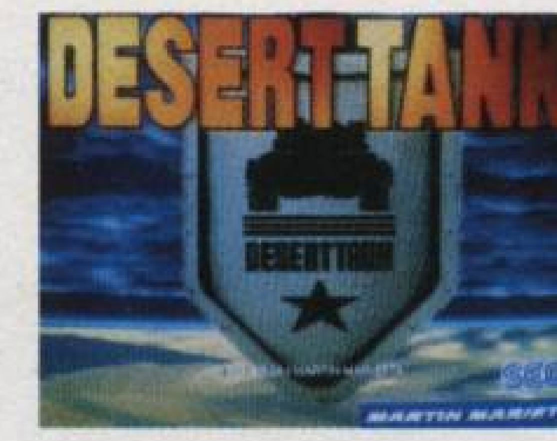
SoftImage, the French team recently purchased by Microsoft, have become one of the stars of the IG industry. At Siggraph the company were proudly promoting games created with their popular animation/rendering software. *Road Rash* (see page 48), *Shock Wave* (**Edge** 12) and **Edge** itself (see cover) have all benefited from their rendering tools, while their animation tools played a major part in creating the Flintstones film.

Also on display in SoftImage's booth was a device from Digital Image Design (no connection with the British company of the same name) called The Monkey. Looking initially like a poor Dr Who model, it's a multi-limbed creature with sensors connected to all its parts. When the model is moved, the changes are automatically entered into a computer which generates the corresponding animations.

Movement capture and generation was perhaps the most common Siggraph theme. Cyberware, who led the field with their T2 effects, now use 3D laser scanners to highlight a figure, together with a camera to record the results and a computer which transforms the data into a digishell within seconds.

SoftImage's system uses high-contrast sticky tape that is fixed to the moving object and filmed using high-definition cameras. The results

Continued next page



Martin Marietta's texture mapping technology was demonstrated in Sega's latest Model 2 coin-op, *Desert Tank*

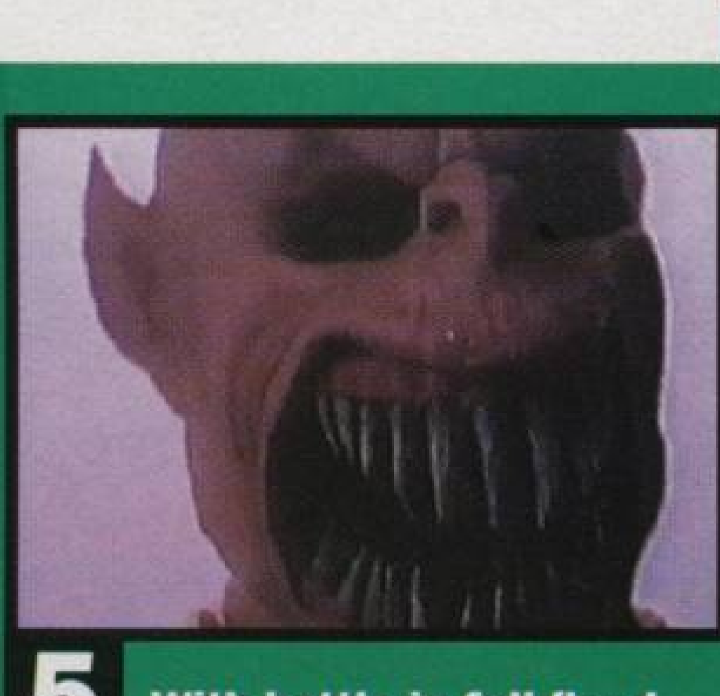
What is it?

It's one of the most powerful software effects packages in the world. The Industrial Light And Magic studios powered it up for the Jurassic Park movie, and Rare are using it to put this year's biggest SNES game together





This virtual house is the product of a collaboration between British VR specialists Division and Japanese giant Matsushita



5 With battle in full flood, Baraka lets loose a guttural roar. (Baraka's blades will not be seen on British television because they are deemed to be too violent)



6 Shao Khan, master of ceremonies, keeps a watchful eye on the fighters. Raising his arms, he screams 'Mortal Kombat' into his mask. Fade to *Mortal Kombat* logo







Silicon Graphics' well-attended Silicon City featured an Onyx-based skiing demo (left), in which you guide a cute character across a texture-mapped landscape; a Cutty Sark-branded whisky-running game developed by Greystone Technology (right); and a VR cathedral tour (inset), complete with a stereo imaging system

it is...

Alias' *PowerAnimator* software development tools. Employing digital solutions to bypass traditional camera effects, it offers explosions, fog and instant rendering at the touch of a button – if you've got an SGI Onyx

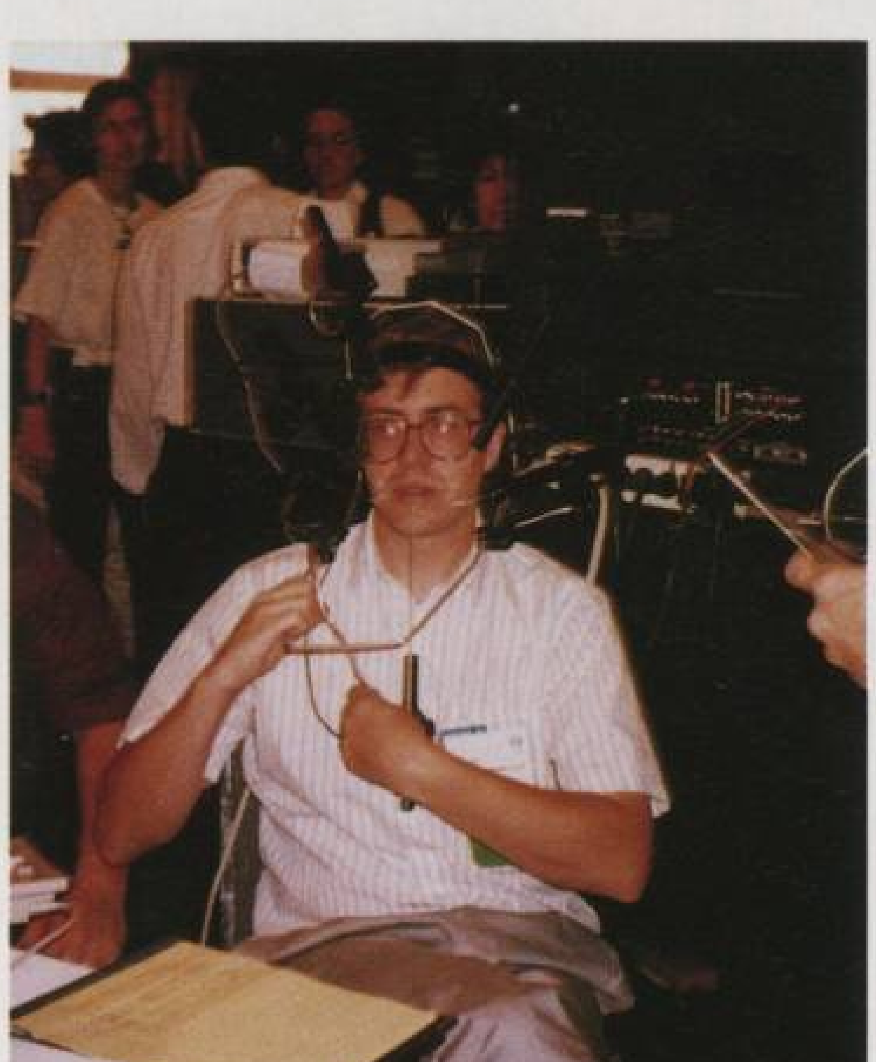
Continued

are then digitised and applied to an animated character.

SimGraphics' VActor Performer and VActor Expression (body and facial movement respectively) use sensors applied to the subject's various nodes. The system, which was employed to produce the animation sequences for Acclaim's *Alien Trilogy*, was the highlight of the animation show.

Hewlett Packard went ballistic with a huge enclosed theatre ringed with workstations. Inside, 30 people at a time, working as a team, used joysticks to fly a damaged shuttle craft. When the mission had been completed, the happy spacefarers were given photos and trotted off to play a coin-op version of *Demolition Derby*.

Silicon Graphics' Silicon City was probably the best-attended section of the entire show. Visitors queued up at a carnival-style kiosk for tickets to SGI's virtual playground, which included a tour through a VR cathedral, two virtual downhill skiing games, and a bootlegging game from GreyStone Technology sponsored by Cutty Sark whisky. Also on display was *Donkey Kong Country* (whose graphics were rendered on Rare's SGI network) and an SGI version of *Doom*.



VActor Expression is a digital animation system which uses human models (above) to provide data

For those who've been waiting for a good, cheap VR headset, Virtual I/O had two different models that could fit the bill. The Gamer has a streamlined faceplate and a single large LCD display with a head tracking motion sensor for under $250. The Ultra View 2020 offers dual high-quality displays for 3D viewing at under $400. Both headsets have been chosen by US cable company TCI as part of their interactive television trials on the Sega Channel.

The lumbering giant of the industry, IBM, are also venturing into VR. Big Blue have announced an alliance with Virtuality to create a line of PC-based virtual reality systems, which will start at a mere $10,000. The boxes will be provided by IBM, while the software, accelerator cards and HMDs will come from Virtuality.

Disney's booth highlighted three of their divisions: Animation, Software and Imagineering. The animation exhibit and demos of the Aladdin game were interesting, but they couldn't hold a candle to Imagineering's latest entertainment creation, the 'Aladdin's Magic Carpet' ride, incorporating electric motors driven by SGI machines. Unfortunately, free rides weren't on offer to the public.

The Caligari Corporation are renowned for their intuitive 3D modelling interfaces in packages like *Caligari* on the Amiga and *trueSpace* on the PC. Now Sony have chosen Caligari to provide the official modelling tools for the PlayStation. In return, Caligari have expressed an interest in developing interactive environments for networked PlayStations.

This year, Siggraph's 'VRoom' area included three CAVEs. Nothing to do with cliff walks; CAVE stands for Cave Automatic Virtual Environment, a small room with rear projection screens for the walls, floor and ceiling on which realtime 3D images are displayed. These are then viewed through a pair of stereo goggles.

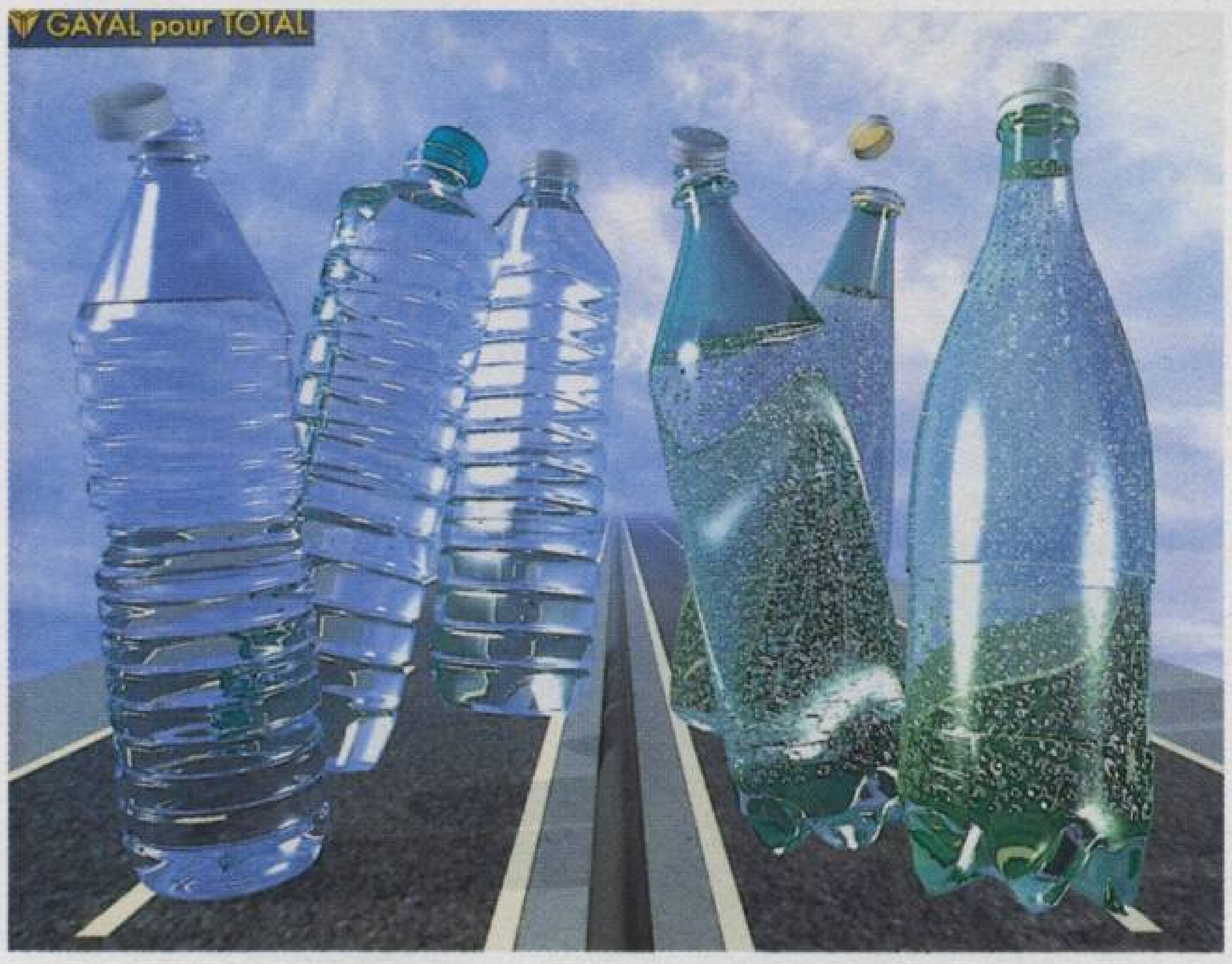
CAVEs are designed to allow users to walk through completely virtual environments and manipulate objects within them, thus allowing them to do →

BUZZ words

next generation
bit of a mouthful **next generation** don't you think sounds a bit long winded and crap to me i mean a new gamebox has got to sound cool still me real mates who are in the know reckon that **next generation** technology will have polygons polygons polygons it'll be full of polygons all rendered really smooth but only smoother but with a **next generation** label it might turn out crap like the new star trek did i mean would the *real* captain kirk have a slaphead? and without a vulcan grip in your final frontier mate you'd be buggered...







Renowned animator Phil Tippett (designer of Return Of The Jedi's AT-AT walkers) showed off a superb SoftImage-rendered bug (top). SoftImage had many other outstanding animations on display

→ things like explore 'inside' molecules. Not surprisingly, a set-up like this requires a lot of computing power: each CAVE was connected to a SGI Onyx, which in turn offloaded work onto a second supercomputer.

Less high-tech was Aqua Thought's Cyberfin, one of three 'digital dolphin experiences' at the show. Visitors lay back on a pulsating liquid crystal-filled 'stimulation device', through which sound was pulsed by a stereo hydrophone, and watched 3D film of dolphins through stereo goggles. Every home should have one.

Over the wire

A regular spot where Edge reports on how technology will shape the news of the not-too-distant future...

...Global Network News, 15:09:02, DC City...

A Seattle teenager is on a life support machine today after being 'virtually' murdered late yesterday.

The incident occurred as 15-year-old Robin Goodyear 'jogged' through a digitally rendered Central Park using the home entertainment system VIRTUE (Virtual Intelligence Real Time Universal Emulator). The *Central Park Jogging Experience* went tragically wrong when Robin was accosted by three muggers and shot twice in the head during a violent struggle. Robin's brain perceived the 'virtual' murder as real. The boy's parents witnessed the murder on the unit's video screen but were unable to act quickly enough to switch the machine off.

The VIRTUE system uses the latest 'Hyperreal' technology, called CRANS (Cerebral Recognition and Neural Stimulation), which recognises and decodes brain activity and responds with neural stimuli, providing a totally immersive experience driven by the user's desires.

The incident emphasises the danger of such 'entertainment systems', according to consultant neurosurgeon Richard Connor II: 'If people's subconscious neuroses are awakened while using these machines, the consequences can be very serious indeed. The patient's fear of mugging inevitably triggered the incident.'

VIRTUE's developers, World Entertainment Systems Technology, Inc, deny any responsibility. A spokesperson said: 'We cannot be held responsible for this terrible incident. We are merely enablers who provide an opportunity for customers to create their own experience. If the user is murdered then that is a result of their own brain activity and not our system.'

Ironically, the methods being used to treat Robin employ the same technology as that which allegedly caused the tragedy. Digitised images of Robin's parents are being transmitted to his brain via sophisticated VR equipment in the hope of stimulating it into normal activity. Vice-president Schwarzenegger is also taking time out of his busy schedule to record a video message.

Meanwhile, the murder claim is being dismissed by Seattle police chief Bob Hill: 'As far as I am concerned, no crime has being committed. There are no bullet wounds or other physical evidence. In any case, the alleged crime was perpetrated in Central Park, New York. That's out of my jurisdiction.'

...transmission ends...

Contributions to **Over The Wire** are welcome. Please send your articles (400 words max) to **Edge**, 30 Monmouth St, Bath BA1 2BW. Get your piece printed and win a year's subscription to **Edge**

Namco hatch new **plot**

Namco are banking on their coin-op reputation to draw the crowds to their new entertainment complex. But is it just a glorified arcade? Edge gets a ticket to ride

The latest addition to Japan's growing number of theme parks has just opened in the small Tokyo suburb of Futako Tamgawaen. Nothing surprising there, except that the company behind it is none other than Namco, the coin-op legend responsible for such seminal videogames as *Pac-Man* and *Galaxians*.

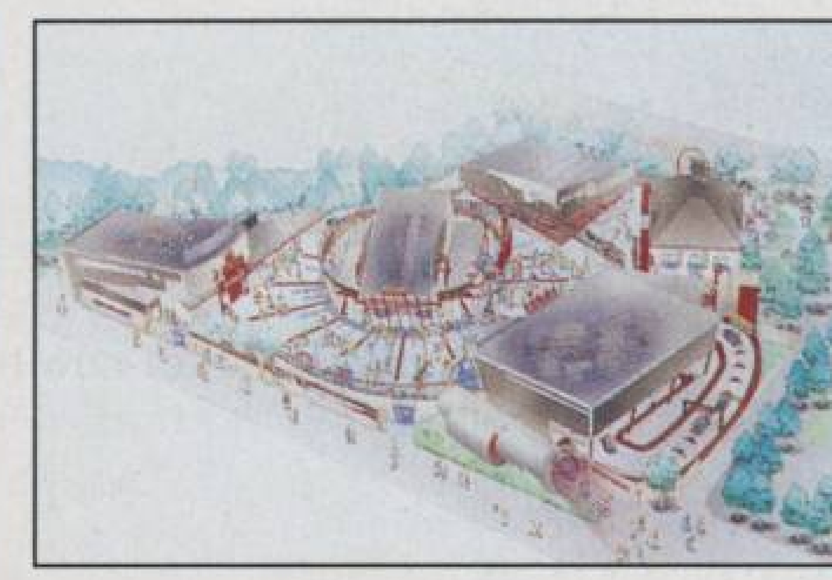
Namco have discovered that the theme park business is a lucrative adjunct to their core coin-op trade, and the new park, Empire Of Eggs, is designed to complement their existing Wonder Eggs development. Other videogames companies have not been slow to recognise the opportunities offered by theme parks, either: Sega recently cut the ribbon on their own park, Joypolis, in the Japanese city of Yokohama. Namco and Sega are now going head-to-head in an attempt to woo customers to their respective parks; once inside, the punters provide a captive market for each company's proprietary technology.

One of the main attractions in Empire Of Eggs is the *Hornet-1* flight simulator, situated in 'Fighter Camp'. Billed as 'the first real flight simulator in the world', *Hornet-1* was developed by Namco in collaboration with California-based VR specialists Magic Edge, and is powered by an SGI Onyx Reality Engine². Budding pilots, split into teams of six, sit in enclosed two-person cockpits capable of producing eviscerating 360-degree rolls and 70-degree pitches. They can communicate with each other throughout the 40-minute flight, as well as call on Namco instructors for advice on how to fly the aircraft.

The 'Miracle Tours Camp' is the area of the park specialising in computer animation. Its central feature is *Movieride*, a futuristic ten minute trip in a high-performance car around a 3D pinball circuit. Up to 56 people sit on a piston-driven platform whose movements are synchronised with those of the computecr-generated car.

Sega have already injected massive investment into theme park development, and Namco will have to match that funding to stay in the game. The two companies' historically fierce rivalry in the coin-op market has now transferred to a new arena, with even greater rewards at stake.





Curious customers turn up to see what's on offer (left). An artist's view of how the complex looks from the air (above)





Touted as the most realistic flight simulator available to the public, the SGI Onyx-driven ride, *Hornet-1*, is Empire Of Eggs' star attraction





New voice-recognition technology is used in the sixplayer, 80-metre cart ride, Drift King

FES '94: see the future

The Future Entertainment Show is *the* big event this autumn. Edge thinks you should be there

Unusually, all the big computer exhibitions in the United States took place this year without featuring any major launches of new hardware. Nintendo teased visitors to the Chicago CES with their Ultra 64 demos, but with the traditional season of highest consumer activity still some months away, the consensus among hardware manufacturers was that the time wasn't right for any big unveilings.

Which means that this October's Future Entertainment Show is ideally placed to catch the fanfares surrounding the pre-Christmas birth of the new consoles. Sponsored by Future Publishing, the makers of **Edge**, and featuring a wealth of cutting-edge hardware and software, the Future Entertainment Show is the only place where you'll get an in-depth insight into the very latest developments in the interactive entertainment industry.

Because **Edge** is always at the forefront of new developments, the magazine has been granted a special position at the heart of the FES. A dedicated **Edge** arena will feature all the very latest hardware, and **Edge** staff will be in attendance to answer questions and chair seminars on the future of interactive entertainment. You can expect a couple of *big* surprises there, too.

Coin-op fans will be in their element, as London's Funland – widely regarded as Britain's biggest and most exciting arcade – will be transplanting some of their latest and greatest coin-ops for showgoers to play.

3DO will also be in attendance to promote the UK launch of their 32bit machine. And Philips, inventors of the CD, will be discussing the future of the shiny disc as a medium for games, as well as showing off their latest CD-i hardware. Atari will be on hand as well, gearing up for the crucial Christmas sales period, and will be keen to demonstrate crowd pullers such as the highly awaited duo, *Alien Vs Predator* and *Doom*, for their 64bit Jaguar. With one of the most exciting software release schedules ever over the coming months, the PC will also be well represented, as will the Amiga, SNES and Mega Drive, which still account for the biggest slice of the current videogames market.

The Future Entertainment Show is at Earls Court 2, London, from October 26 to October 30. Tickets cost £6 in advance, £7 on the door, and £5 for parties of 10 or more. Phone 0369 4235 to book yours. **Edge** will be there. So should you.

The Future Entertainment Show
Earls Court 2
26th – 30th October 1994
CD-Rom • Amiga • Mac • PC • CD-i • Consoles

Where is it?

This seven-storey building houses the most eagerly waited addition to the console market ever, and is the nerve centre for half a billion dollars' worth of investment from a company worth more than 30 billion



A selection of groundbreaking titles that should be making their way into the halls of this year's Future Entertainment Show in London

Data stream

Bytes needed to store 14,000 two-hour feature films: **21 trillion**
Forecasted shipments of PowerPC chips by the end of 1996: **6,009,700**
EA's global sales for the year ending March 1994: **$418.3 million**
Acclaim's sales for 1994 to date: **$332 million**
Acclaim's profits for 1994 to date: **$31 million**
Number of worldwide retail outlets stocking 3DO units: **15,000**
Marketing budget for *Donkey Kong Country*: **$10 million**
US marketing budget for the Jaguar: **$30 million**
Number of Jaguar CD units expected to be sold in the US in the first year of release: **300,000**
Virgin's sales forecast for *The Lion King* in Europe: **1 million units**
Virgin's sales forecast for *The Lion King* in the US: **750,000 units**
Amount raised by MicroProse's US share issue early this year: **$27 million**
Number of SNES units sold in the UK in 1992: **680,000**
Number of SNES units sold in the UK in 1993: **720,000**
Number of Mega Drives sold in the UK in 1992: **920,000**
Number of Mega Drives sold in the UK in 1993: **880,000**
Number of copies of *Civilisation* for PC, Amiga and Mac sold across Europe to date: **250,000**
Estimated number of 3DO units being sold worldwide each month: **10,000**
SNES *FIFA Soccer* units sold in Europe to date: **200,000**
PC CD-ROM's share of the CD games market in May 1994: **41.7%**
CD-i's share of the CD games market in May 1994: **1.5%**

This Month on Edge



A gloriously haphazard collection of rumours, short stories and stop-press gameshots

it is...
The headquarters of Sony Computer Entertainment in Minato-ku, Tokyo. The Akasaka Oji building is where Teruhisa Tokunaka first revealed the PS-X in the first stage of Sony's plan for world domination

Following the debut of the Ultra 64 at the Summer CES, more details have surfaced about Nintendo's arcade and home hardware. Although the latest Ultra 64 chipset runs at 80MHz, **Edge** has discovered that when the home system finally appears at the Summer CES in Philadelphia next May, that figure will rise to 90-100MHz. As **Edge** revealed in issue 12, Williams' *Cruisin' USA*, which currently runs on a custom 32bit Bally Midway board (see **Edge** 12), will be upgraded for the Nintendo system.

Super 32X software is steadily shaping up. Spearheading the attack of what is already being dismissed by some as a Christmas stocking filler with a limited future is *Virtua Racing Deluxe*, boasting twice the number of polygons of the SVP-boosted Mega Drive version, a frame rate of 20fps (instead of 15fps) and 256 colours onscreen. VR fans will be in their element when it arrives towards the end of the year. Extra enhancements also include a choice of three cars and three new tracks. Other emerging titles for the new system include *Bullet Fighters* (3D space shoot 'em up), *Metal Head* (3D robot shoot 'em up) and *Ultimate Fighting* (gaudy-looking *SFII* clone).

TDK and The 3DO Company have just announced a deal to produce IC card hardware for the 3DO player. An adaptor is planned that will expand the 3DO's RAM save capacity (the current system has 256K of SRAM), plugging into the expansion socket at the back of the unit. The adaptor will be finished by the end of the year and will go on sale early next year.





3DO: the only home machine with *Super SFIIX* (3DO shot above)

A CD-ROM drive for the Super Famicom has long been rumoured, and it now seems that a prototype is awaiting the go-ahead at Nintendo's Kyoto HQ. Containing a Super FX chip (MkIII) and a 32bit R3000A CPU, the finished unit could be unveiled at Tokyo's New Software Exhibition in November. Other tentative projects at NCL include a 32bit VR system (with projection technology originally developed by Hasbro), a 32bit Newton-style handheld, and a CD-ROM drive and VR headset for the Ultra 64



***Ridge Racer 2* (above), Namco's latest version of the coin-op, allows up to eight players to be linked and includes a rear-view mirror (inset)**

Edge is involved in setting the agenda for a new annual developers' conference for the videogame industry. The first Entertainment Developers' Expo (EDE) will take place on January 29–30, 1995, at the Hammersmith Novotel. Registration cost is £190 for the two days of the conference.

3DO owners finally have something to show off to their 16bit-owning, beat 'em up-crazy friends. *Super Street* →





Sega's *Virtua Racing Deluxe* for the Super 32X features 256 colours, a higher frame rate and three extra tracks

→ *Fighter II X* will be an interesting performance test for 3DO – an experienced 3DO programmer told **Edge** that it's incredibly hard to get the system to shift graphics at greater than 30fps (half the arcade game's update). It's reassuring to see that 3DO have had the sense to encourage Panasonic to start readying a new controller for the game – the standard 3DO pad has only five usable buttons.

After *Ridge Racer 2*, more sickeningly lovely textured and Gouraud-shaded polygons are on the way from Namco. The company's next driving coin-op will be a Formula One game with an eightplayer link-up. The game will appear at this year's JAMMA show in a couple of months' time

Finally, Edge had a change of scene this month, swapping its penthouse suite at Future Publishing's Bath HQ for a two-room apartment on the first floor. **Edge** soon found that the lack of a coffee machine within arm's reach was amply compensated for by a sunny street-facing balcony which proved a prime location for late-night beers and fags at deadline time. Or any other time, for that matter...



Hudson Soft's *Hi-Ten Bomberman*, part of their summer 'Super Caravan' tour in Tokyo, is an excellent tenplayer version of the game

Datebook

September

Business Computing Exhibition Olympia Exhibition Centre, London. Tuesday, September 27–Friday, September 30. For more details call Montgomery Exhibitions Co Ltd on **081-948 9800**, or fax them on **081-940 2171**

October

Information Systems Exhibition Earls Court, London. Tuesday, October 18–Thursday, October 20. For more information call the show's organisers, Blenheim Group plc, on **081-742 2828**

Future Entertainment Show Earls Court 2, London. Wednesday, October 26–Sunday, October 30. The latest in computing and interactive entertainment, plus the final of the National Gamesplaying Championship. Call **0369 4235**

Acorn World Computer Show Wembley Exhibition Centre, London. Friday, October 28–Sunday, October 30. A must for all Acorn users. Call Acorn Computers on **0223 254254**

Information Technology Exhibition City IT, Canberra, Southampton Dock. Thursday, October 27–Sunday, October 30. Call Richmond Events Ltd on **081-332 2422**

November

Software Development Exhibition National Exhibition Centre, Birmingham. Tuesday, November 22–Thursday, November 24. Call Blenheim Online on **081-742 2828** for further information

Computers In Manufacturing Exhibition National Exhibition Centre, Birmingham. Tuesday November 22–Thursday, November 24. For further details call Independent Exhibitions Ltd on **0932 564455**.

IMAGICAD Lyon, France. Wednesday, November 23–Friday, November 25. CAD/CAM graphics event. Call Reed Exhibitions Co Ltd on **081-948 9800**

Information Technology Trade Fair Russia. Monday, November 21–Friday, November 25. Contact Roger Pilkington Associates, Europe House, World Trade Centre on **071-488 3344**

December

Thai Information Technology Expo Thailand. Thursday, December 8–Sunday, December 11. For further information on this four-day event, contact Thai Fairs Co Ltd on **071-215 6555**, or fax them on **071-280 2034**

Show organisers: if your show isn't listed here, it's only because you haven't told **Edge** about it. Telephone us on **0225 442244**, fax us on **0225 446019**, or send details to **Datebook, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW**

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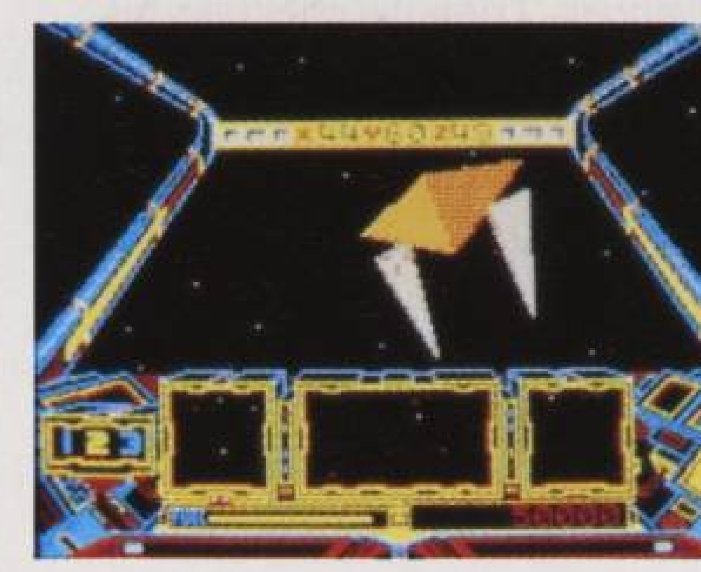
Letters

Express yourself in **Edge**. Write to: **Edge** letters, 30 Monmouth Street, Bath, Avon BA1 2BW

Congratulations are in order for your article on Sony's new PlayStation. While other magazine had a photo of the console and a snap of the joypad, **Edge** gave us a full tech rundown, along with information on the RAM cards, plus a full release schedule and shots of the games in production. To top it all, there was even an interview with Sony and the other major players involved with the machine. The feature gave rise to a few questions, though. You mention that the PlayStation is compatible with MPEG1 files, but will the ability to decode MPEG be built in, or will an add-on still be required to watch VideoCD? Also, what speed is the CD drive?

Retroview is really beginning to get on my nerves. Not because I disagree with your reminiscences about a time when the emphasis was on originality and good gameplay, but because you consistently ignore the Amstrad CPC. All the games you have featured appeared on the CPC, yet it has not had a single mention. You talk about programmers pushing 8bit machines to their limits and producing effects which the manufacturers never thought possible and you always mention the Commodore 64, but effects produced on the CPC were much more impressive. The best example of what could be achieved is Logon Systems' *The Demo*. This still puts most Amiga demos to shame and can make plenty of PC stuff look tame.

Finally, I would like to put to rest all the myths about why

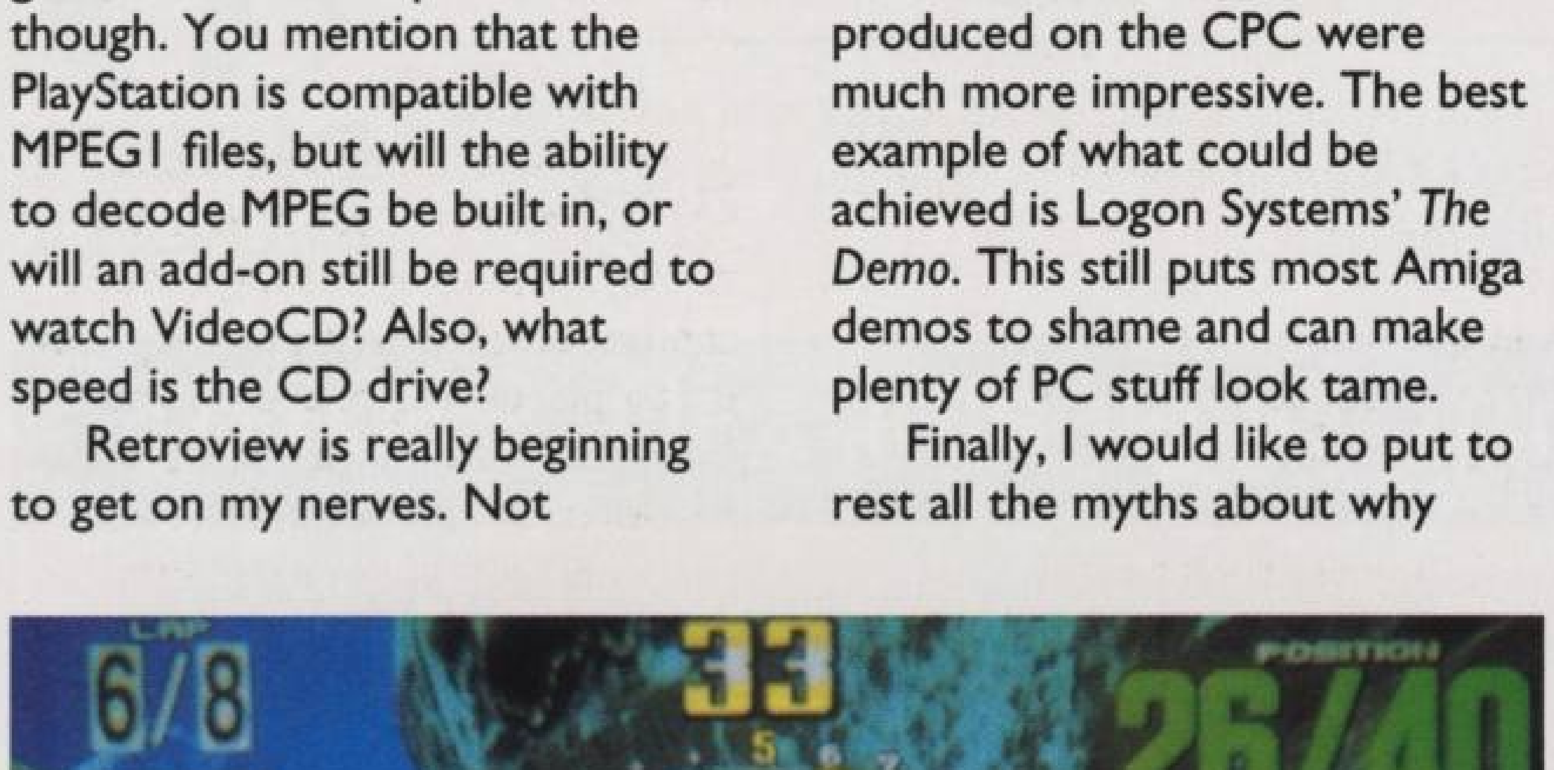


The original *Starfox*, which was converted to the CPC from the C64 (see Grant Taylor's letter)

Starfox was renamed *Starwing* here in Europe. The real reason is that in the mid-'80s there was a game on the CPC called *Starfox*, and Nintendo would have been in breach of copyright if they had released their own game with the title *Starfox*.

Grant Taylor, Rosyth

The PlayStation supports MPEG1 as an option, and the CD drive is double speed (300K/sec). It also includes an 80MIPS data decompression engine which can decompress data on the fly directly into RAM. Thanks for setting **Edge** straight about the CPC, too. Amstrad owners the world over will now be able to take pride in the fact that their machines played host to the original *Starfox*. Although the C64 had the game first.



J Cafferty thinks it's a waste of time and money trying to produce perfect conversions of coin-ops like *Daytona* for the new consoles

Having owned virtually every games platform, from C64 to 3DO, I feel there is a problem with the current trend towards gaming that needs to be addressed: namely that every time new hardware is released it tries to reproduce the latest arcade games. Unfortunately, this always results in substandard 75%-accurate conversions for which we are expected to shell out in excess of £50. Current 16bit machines tried and failed to accurately reproduce the excellent sprite-scaling 3D arcade hits of recent years. Now, with the advent of new 32bit hardware, the trend continues. Not content to produce 100%-accurate conversions of great games like *Out Run* which the extra power of the new consoles would allow (a perfect conversion of *Out Run* would wipe the floor with any driving game available for home use), companies insist on trying to convert the latest dedicated polygon shunters and, as highlighted by *Virtua Fighter* on Saturn, are unable to reproduce them accurately.

The end result is that games never match the claims, leaving gamesplayers to suffer a constant stream of substandard conversions which, under this policy, will never be perfect, only adequate. There must be some progression, but not at the expense of quality, which I feel would improve if companies stuck to original titles and conversions within the limits of the hardware instead of wasting the extra power they offer reaching for the unattainable.

Hopefully, the situation will improve with the release of

Sony's new hardware and its promise of amazing leaps in performance. Until then I shall continue to rely on **Edge** to help me weed out the few quality titles from the sea of rubbish currently available.

J Cafferty,
Cambridge

True, few arcade games have ever been converted perfectly (*Arkanoid* on the Amiga is one exception, although the game itself was unmemorable), and as long as a rift exists between arcade and domestic hardware, that situation is unlikely to change. In the late '80s, games like PC Engine *R-Type* and Mega Drive *Strider* came close to replicating popular coin-ops, but arcade purists could spot the differences. Home technology will always remain in the slipstream of arcade systems because the arcade industry is technology-driven – there will always be something newer, faster and more exciting to pump money into. Even if Sony's machine can deliver an exact copy of *Ridge Racer* (a tad optimistic given the timescale Namco have, perhaps) it seems crazy to expect it when we still haven't seen a racing game on a home system that comes close to *Out Run* – a coin-op that's now getting on for eight years old.

I It's good to see that **Edge** has finally cleared up the story of who wrote *Defender* and *Robotron* for Williams – Eugene Jarvis rather than Eugene Evans, to whom **Edge** (and Archer Maclean) attributed the work a couple of times previously. Eugene Evans is an old friend of mine and he was quite fascinated when I told him that apparently he'd written *Defender*. Then he checked his bank statement and realised that he couldn't have done.

Patrick Buckland
(Programmer of *Crystal Crazy* for the Apple Macintosh)



The Samsung-branded 3DO is yet another addition to the already congested console market (see letter from Gary Osborne)

Will the real Eugene '*Defender*' Jarvis kindly make himself known…

Since I have been reading **Edge**, there has been little mention of the Internet and the services provided by it. With an increase in the number of PCs in the home, and networking becoming easier, more and more people have access to the network. Recently, ambient techno band Future Sound Of London did a two-hour live gig on Radio 1 while broadcasting video images onto the Internet.

It would be useful if **Edge** could provide information on the network. It could describe some of the features available on the Internet, such as Usenet News, FTP, Mosaic, etc. Also, it would be good if you could provide an E-mail address for the magazine so that readers could send in mail via the network. Even an **Edge** bulletin board could be set up to provide news on upcoming features and updates on the computer scene.

I understand that your main priority is to sell magazines, but I think that introducing something like this may allow readers of **Edge** greater interaction with the magazine and could give you a larger readership.

David Baumann,
Dunstable

Agreed. Edge is already using the Internet to offer a better service to readers – letters, news and queries can be sent to future@cix.compulink.uk – but expect an updated E-mail address to appear soon. Also, conferences (such as the recent **Edge** conference on CIX) are great forums for discussion – watch out for developments in that direction, too. There is, however, a limit to how much general Net info **Edge** could reasonably contain. That's where Future Publishing's newest magazine launch – .net – will fit the bill. Look out for it on October 26.





Edge's PS-X cover (right) attracted mixed reactions. Greg Longhurst liked it; others preferred the rendered images of previous issues (left)

There are just too many videogames machines being produced at the moment, and there is going to be some hard competition once all these machines are released. With more and more electronics companies breaking into the videogames market (Panasonic, Sony, Samsung, etc), do you think other companies, such as Aiwa, Toshiba or Sanyo, for example, will end up releasing games machines?

Gary Osborne,
Middlesbrough

Aiwa are owned by Sony, so there is a possibility that they'll release a version of the PlayStation. Sanyo, Samsung and Goldstar are all committed to releasing 3DO players later in the year, but Toshiba are keeping quiet.

I would like to congratulate **Edge** on the PlayStation feature in issue 11, and in particular on the cover (or should that be covers?). While some of the rendered images on previous covers have been spectacular (**Edge** 3 and 7 spring to mind), the use of a fifth-colour foil on a white background was seductive and stylish. It's just a shame that Sony chose to style the PlayStation on one of those trendy flat cookers.

Greg Longhurst,
Hants

Well, Edge said it was a hot piece of kit. And talking about covers…

The worst thing about **Edge** recently has been the fairly boring covers. I can understand that you may feel that a plastic bag prevents you from using the magazine cover in any form of 'attract mode', and certainly, half of your readers would buy the magazine regardless of the cover, but what about the point-of-sale customer who is blissfully unaware of what **Edge** is all about?

The last three covers – *Taos*, Trip Hawkins and the Sony PS-X – have been unexceptional, to say the least. Earlier issues looked more attractive with their sci-fi/cyberpunk imagery. The contents of **Edge** are about right, but the covers could do more to generate interest. The plastic bag – which is a good idea and should be retained – could be made partially clear so that cover artwork could be seen rather than just glimpsed.

While I appreciate that you want **Edge** to appear different to

Continued next page

the overbright, childish images of other magazines, it could be given more visual impact without losing any of its originality.

Just out of interest, why do there appear to be two editions of issue 11, the only difference being the size of the PlayStation on its cover?

Anonymous

Edge has no intention of abandoning rendered images yet – they're an essential part of the magazine's style. Do expect to see less of the bag in the future, though – one day **Edge** might be naked and vulnerable. There was no specific reason for issue 11's twin covers; **Edge** merely thought it would be an interesting experiment.

There were two major inaccuracies in your story in **Edge** 12 about the Jaguar CD-ROM European press conference.

1. Sam Tramiel was not there.
2. The CD drive did not blow up.

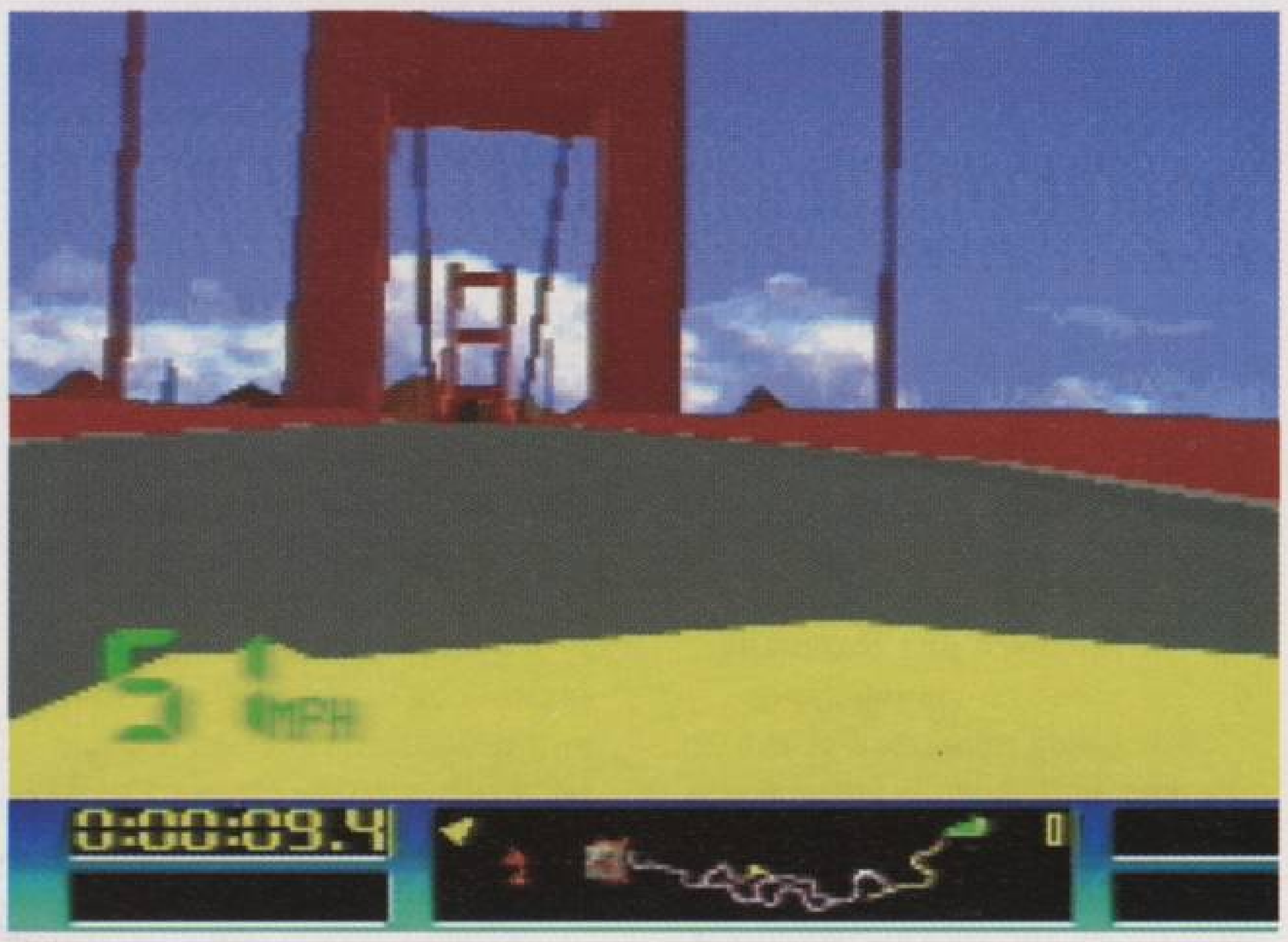
Taking these two pertinent facts into account, your story does seem to be rather thin on facts. A product of the Sun school of journalism, perhaps? The European tour was actually extremely successful and ran very smoothly. While there were teething troubles with a CD-ROM drive (which turned out to be operator error) those things are as common to any press conference as typing errors are to any magazine. This story was extremely damaging and grossly unfair, don't you agree?

In the same issue Julian Roche expressed concern about Atari's commitment to the Jaguar. I would like to take this opportunity to say to him:

Mr Roche, we are confident that your purchase of the Jaguar is the correct choice, and although we can understand your frustration and apologise for the delays, we can assure you that these are due to Atari's determination to ensure that games such as *Alien Vs Predator* live up to the expectation created by Jaguar and set a new standard by which others will be judged. By the time this letter is published you will be able to purchase *Wolfenstein 3D*, and the following choice will appear on shelves between September and October: *AVP*, *Club Drive*, *Kasumi Ninja*, *Checkered Flag*, *Doom*, *Dragon*, *Zool 2*, *Theme Park*, *Syndicate* and *Ultra Vortex*.

**Darryl Still,
Atari UK**

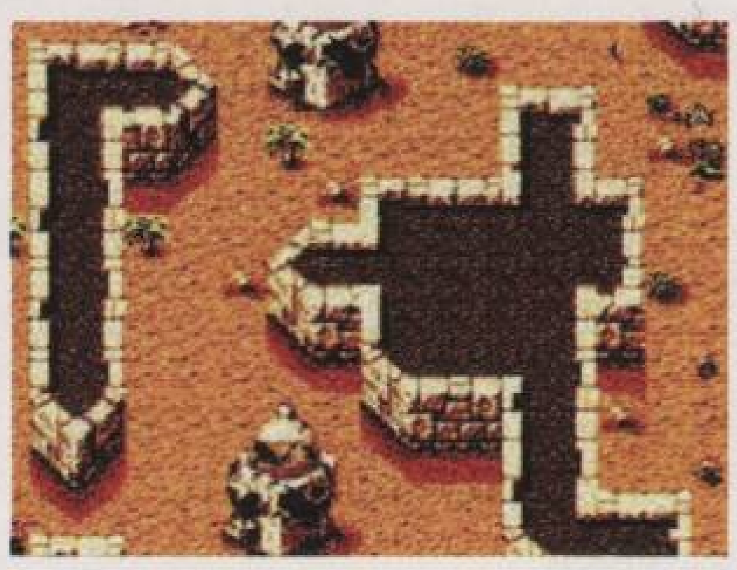
The phrase 'blow up' was an unfortunate choice. It was not intended to create the impression that the CD-ROM drive exploded with some kind of spectacular pyrotechnical display, merely that it suddenly – and embarrassingly – ceased to function. If the incident was indeed due to operator error rather than the shortcomings of the hardware, it's good news for Jag CD-ROM buyers. As for the absence of Sam Tramiel, this was a genuine slip-up on **Edge**'s part. Apologies are due to both Atari and Mr Tramiel.



Darryl Still, Atari UK's marketing manager, reassures Julian Roche (see Edge 12) that Jaguar games like *Club Drive* are worth waiting for

I am confused. Your magazine is stated to be about 'interactive entertainment' on computers. One of the machines you list is the PC, yet the only Commodore machine you cover is the CD^{32}. This is a contradiction, because the Amiga, as you keep telling us, is a games machine and is therefore part of the interactive entertainment world. The PC, on the other hand, is a 'professional' computer, and games are only secondary. I don't want to get into any petty 'my computer is better than yours' squabble, as I have used both systems and both have their qualities. What I don't understand is how you can keep saying you are unbiased and yet refuse to cover a machine on the grounds that you don't like it.

To prove my point about the Amiga deserving more coverage than the PC in your magazine, let's look at an Amiga system that is comparable to the PC. If we take an A2000, give it a 33MHz 68040 CPU, EGS Spectrum 24bit graphics card, a GVP 16bit sound card and 8Mb of RAM, then we have a system that would make the PC look as if it was standing still. The graphics card can display and update 24bit pictures and animations in realtime – try getting that on any other system.



These days, games like *Cannon Fodder* are rare on the Amiga (see Kevin Slamaker's letter)

As you can see, it is not the technology or the hardware that is failing the Amiga but Commodore's marketing strategy. If you did your research you would know that the Amiga was developed in the early 1980s. The IBM AT and XT are a similar age, yet while there are very few of those used professionally today, the A500 keeps going. I own both an Amiga and a PC, and use the PC only because it still has a fixation on the past and is not willing to move on. Evolution will take its toll and as long as the Amiga is not let down by Commodore we shall see who has the last laugh in the years to come.

Stop trying to discredit the Amiga as you are only making fools of yourselves every time you are corrected by your readers when you make a blatantly false remark about something you obviously don't do your research on.

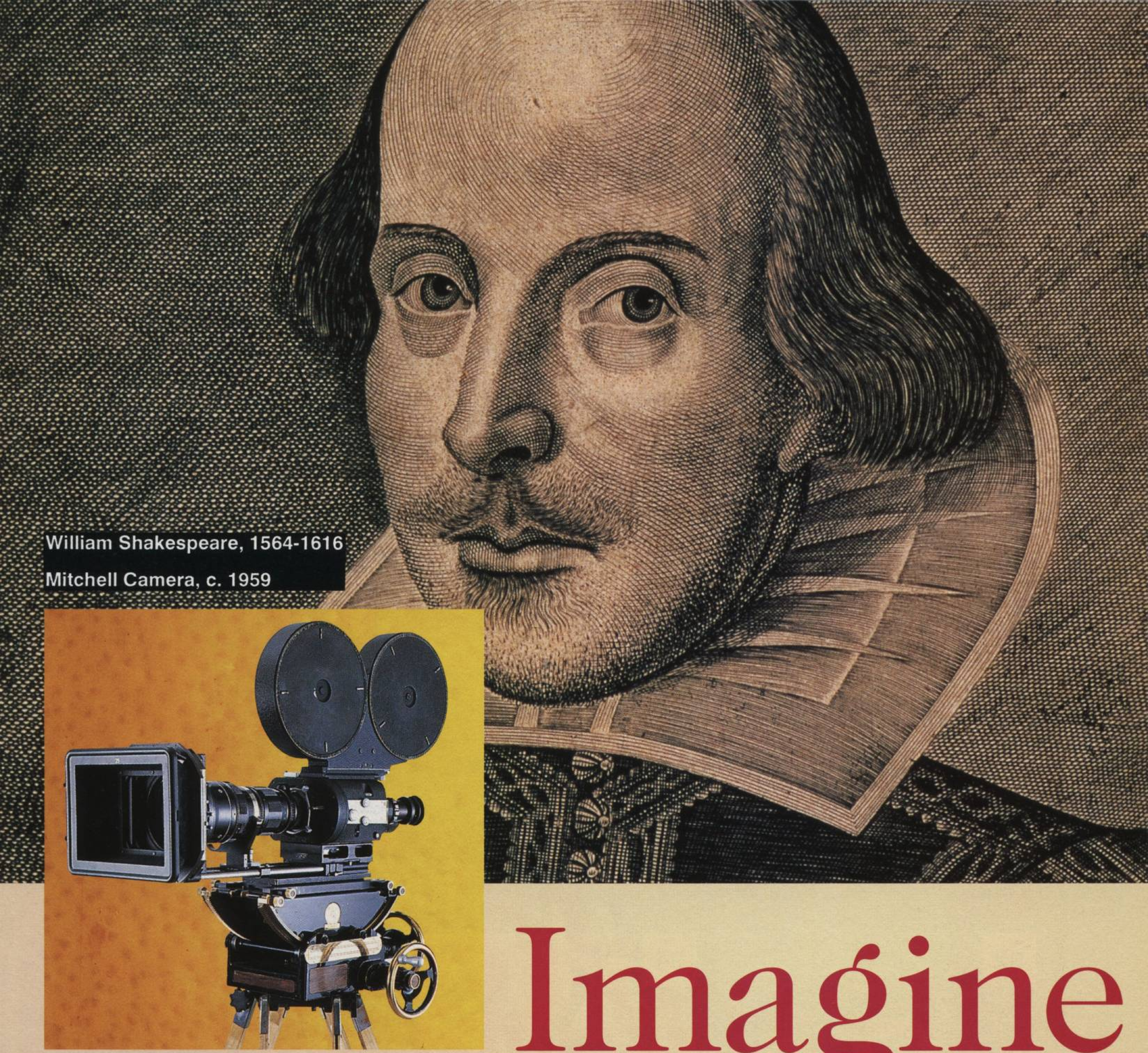
**Kevin Slamaker,
Perth, Australia**

Edge does not dislike the Amiga, nor is it ignorant of its history. In fact, two of the team still hang onto their A500s because of its library of classic games. But the reality is that the golden days of the Amiga as a games machine are well and truly over – software houses have stopped developing for the machine because the PC embraces a much wider global audience. Citing the technical superiority of high-end Amigas is a weak argument for greater Amiga coverage – if the hardware isn't taken advantage of by games developers, how can **Edge** justify giving it as much space as the PC? As it stands, the PC can look forward to many exciting games; the Amiga, on the other hand, can't.

It's strange that you seem to completely ignore the subject of game pricing. You frequently mention the price of the hardware, but as we all know it's the software that sells the kit. I have been encouraged by two points in this area. Firstly, that the CD^{32} is getting budget software – some as low as £15. The second promising aspect is that Sony are proposing to price their software at around £30. This sort of pricing is very important. It doesn't matter how good a game is; if it costs £50, you can't justify it.

**Neil Aubin,
Winslow**

£30 is a tempting figure but there are many factors involved that make it a virtually impossible target. Sony may be able to keep their own PlayStation software as low as that, but thirdparties – who have to pay higher licensing and manufacturing fees – will find it very difficult. Until CD games start selling in the millions, there's little scope for prices to drop.



William Shakespeare, 1564-1616

Mitchell Camera, c. 1959

Imagine

what he'd have done with one of these

SNASM 2

b7

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Metal Jacket PlayStation **Nosferatu** SFC **World Cup Golf** PC **PGA Tour 486** PC **Ecstatica** PC **The Need For Speed** 3DO **Little Big Adventure** PC **Rayman** Jaguar **A-Train IV** PlayStation

Prescreen

With 3D games accounting for no less than seven of the nine previews this issue, it's clear that videogames are now firmly installed in the third dimension.

Destined to play a major role in the 3D story is Sony's PlayStation. **Edge** is ahead of the game with previews of two PlayStation titles: *A-Train IV*, a conversion of the train sim that stopped Japanese gamers in their tracks but couldn't cross the cultural divide; and *Metal Jacket*, whose heavyweight action should be pretty much universal.

The PlayStation may have captured the imagination of the world's gamers, but the grizzled old PC is still pushing the boundaries of 3D graphics technology. *Ecstatica*, a game five years in development, is an example of the impressive work being done for the machine, and *Little Big Adventure*, from the well-respected French creators of *Alone In The Dark*, looks equally striking.

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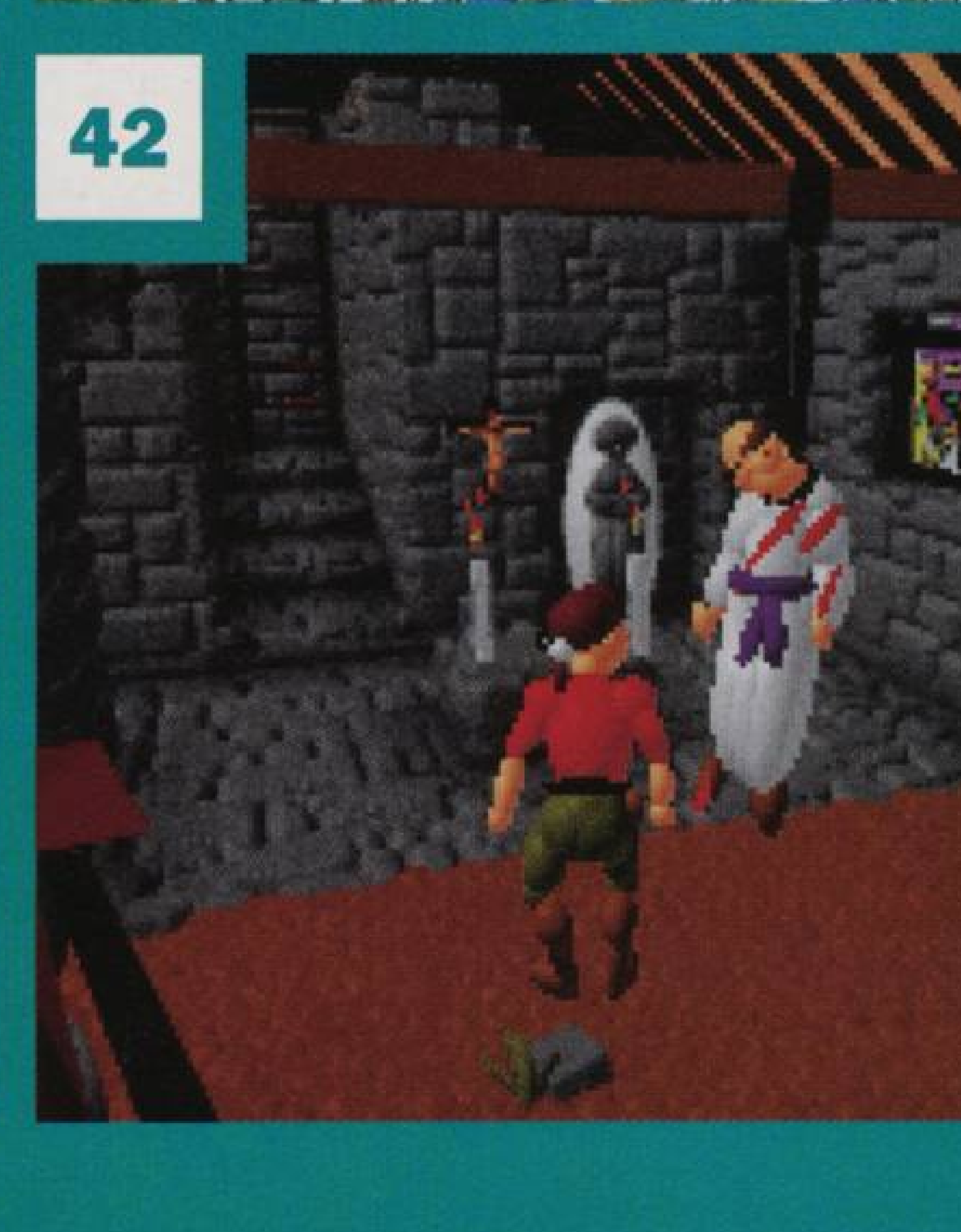
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Metal Jacket



Metal Jacket's huge range of onscreen colours is set to break all records. Here, your robot meets his end after an aerial assault

Japanese 'assault suit' mania finds an outlet in one of the first releases for the Sony PlayStation. **Edge** dresses to kill





Metal Jacket's scenery is highly detailed throughout (above). You can zoom in on the robots (inset)

Format:	**PlayStation**
Publisher:	**Pony Canyon**
Developer:	**In-house**
Release date:	**December '94**
Size:	**1 CD**
Origin:	**Japan**







The screen zooms in (at 60fps, of course) as an airborne foe launches an attack

Generally, the first few titles for new games machines fail to fully exploit the potential of the hardware. With the possible exception of the Super Famicom, looking back on a platform's initial offerings is a sobering experience, especially in terms of visuals. So when one of the first games scheduled for release on a new format is graphically superior to virtually every game currently available, it's obvious that the machine is something special.

No-one wins any prizes for guessing that the hardware in question is the Sony PlayStation, with its complement of advanced silicon. And the game with the honour of being the first to take advantage of that power is *Metal Jacket*.

Running at around 60 frames per second in true colour, *Metal Jacket* is a futuristic 3D strategy/fighting game with gloriously texture-mapped polygon graphics. The 'metal jacket' of the title is a six-metre-tall robot. There are eight of these heavily armed behemoths in the game, each with its own assault capabilities, operated from a control room inside their heads. Once you're installed inside your metal jacket, you engage in battle with other robots, taking advantage of the wide variety of combat options available, including day or night battles, and the range of different terrains.

Metal Jacket is the game that could allow the dream of playing fullspeed, eightplayer arcade-quality games at home to be realised. Using the bundled connectors, each member of the game's robotic octet is eligible for human control in a multiplayer battle. As there probably won't be eight PlayStations in this country when the game is released, many people will be seriously thinking of emigrating to Japan. E

***Metal Jacket* is the game that could allow the dream of playing fullspeed, eightplayer arcade-quality games at home to be realised**

Nosferatu



Recent SNES platformers have been a toothless bunch. **Edge** takes the first bite out of a game aiming to vamp up the moribund genre

Format:	**SNES**
Publisher:	**Seta**
Developer:	**In-house**
Release date:	**October (Jap)**
Size:	**16 Mbits**
Origin:	**Japan**

Decent SNES games seem to take an age to develop these days. *Wildtrax* and *Donkey Kong Country*, for example, have spent almost two years in Nintendo's development mill. As a lengthy development period appears to have had a beneficial effect on both of those games, it seems reasonable to expect that *Nosferatu*, which has been in the works for almost three years now, will also emerge from the production process with the lustrous sheen of quality upon it. And the fact that Seta's platform romp is inspired by two classic SNES games, *Prince Of Persia* and *Castlevania*, gives SNES gamers even greater cause for optimism.

As with most SNES platform games, *Nosferatu*'s scenario is embarrassingly lame. The villain of the piece, Nosferatu, is trying desperately to find the secret of eternal life. His efforts have now brought him to within a whisker of success – all he needs to gain immortality is the fresh blood of a virgin. So there are no prizes for guessing where your girlfriend's disappeared to. Your search for her takes you through seven crumbling,

Seta have given the game's main character more than 350 frames of animation. It's all disturbingly realistic, and disturbingly familiar, too...





This gigantic eyeball (above), one of *Nosferatu*'s many nasties, cunningly evades your attack. Traps litter your path (right); avoiding them can be very tricky





A werewolf sends you sprawling with a single punch (above). Decent-looking backgrounds are *Nosferatu*'s biggest attraction



It looks like there's no way out for the game's hero. But despite those seemingly impenetrable spikes, his situation isn't hopeless

ghoul-infested castles, each one divided into several sections. The seventh castle is where Nosferatu is holed up, with your sweetheart, Judith, as his reluctant house guest.

Employing the now tried and tested rotoscoping technique used in *Prince Of Persia*, Seta have given the game's main character, John Alfred, more than 350 frames of animation: he runs, jumps, fights and clings to ledges in true *Persia* fashion, and as well as being able to pick up and use various weapons can punch and kick his way through the game, *Splatterhouse*-style. It's all disturbingly realistic, and disturbingly familiar at times, too – *POP* creator Jordan Mechner is unlikely to be too impressed.



An end-of-level boss makes his presence felt. This winged fiend wields a potentially lethal axe

Seta haven't devoted all their efforts to making sure that just the main character moves well, though: the rest of the baddies move very convincingly too. In fact, the animation alone takes up almost a quarter of *Nosferatu*'s 16Mbit cartridge. The backgrounds are also impressive.

But what about the gameplay? Judging by what **Edge** has seen of the as yet unfinished game, it promises plenty to keep vampire hunters entertained. This is largely due to some ingeniously designed traps and puzzles, which make *Nosferatu* a compelling, albeit sometimes frustrating, experience – you tend to die very often to begin with, but the game has a well designed learning curve and soon becomes a challenge rather than a chore.

SNES platform games are hardly a rare breed, but few of them are worth preserving. *Nosferatu*, already a member (together with *Castlevania*) of a select group of serious, atmospheric platformers, may also find a place among those games which are still remembered years after their release. It could even drive a stake into Capcom's *Demon's Crest*, due out in late September.

World Cup Golf

The PC golf field is becoming ever more crowded. **Edge** casts an eye over US Gold's new offering, and, opposite, surveys EA's latest *PGA Tour* title

Videogame golfers hankering for atmosphere and graphical fidelity rather than variety may find that *World Cup Golf* delivers

Format:	**PC CD-ROM**
Publisher:	**US Gold**
Developer:	**ARC**
Release date:	**Late 1994**
Size:	**1 CD**
Origin:	**UK**

The whole point of sports simulations is that they enable you to enjoy the excitement, rivalry and tension of competitive physical activity without having to actually exert yourself. So it seems odd that the most enduring example of the sports sim genre features the less than frantic sport of golf. There are virtually no tactics in golf (you play the best shot you can at every opportunity), the intricacies of team play are absent and there's a distinct lack of sweat-drenched action. But the appeal of computer-simulated golf continues undiminished.

ARC's *World Cup Golf* is one of two games aiming for a hole-in-one (see opposite page for Electronic Arts' contender). The game is launching its challenge on the basis of graphical excellence: a CD-only release, it offers 18 holes, each depicted by means of 500 fully rendered SVGA stills; real-world players represented by digitised footage; and a variety of swings which are streamed off the CD as required. After each shot is taken you're treated to a four-second, 60-frame FMV sequence showing a fly-by of the hole. Given the PC's inability to display fullscreen FMV, the results are surprisingly good – although the superimposed ball could be improved.



***World Cup Golf*'s most impressive feature is its detailed graphics (above). The gameplay, though, could be too ponderous for some**



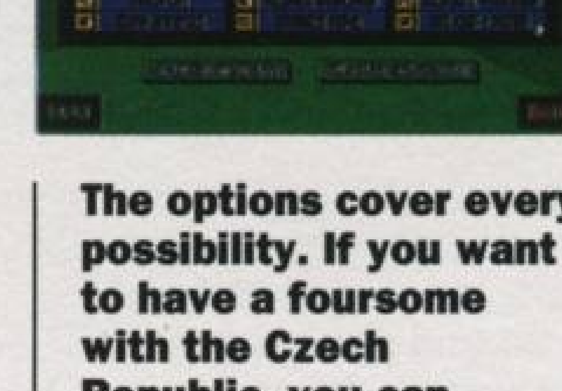


All shot options are determined using windows (above). The actual mouse-click can still go wrong, though

World Cup Golf also offers an extensive range of options. Playing conditions can be varied from Augusta at the height of summer to the most inclement weather St Andrews has to offer, and there are 70 national teams to select from, so it will take some time before all the combinations are exhausted. Even when you've decided *who* to play, there remains the choice of *how* to play: 15 types of game are available, from matchplay to one-club.

ARC have approached the task of creating the definitive golf game by attempting to model every aspect of a single course in minute detail. The lack of multiple locations may prove a handicap, but videogame golfers hankering for atmosphere and graphical fidelity rather than variety may find that this game delivers. E





The options cover every possibility. If you want to have a foursome with the Czech Republic, you can

PGA Tour Golf 486

PGA Tour set the standard for PC golf games. Electronic Arts have just raised that standard



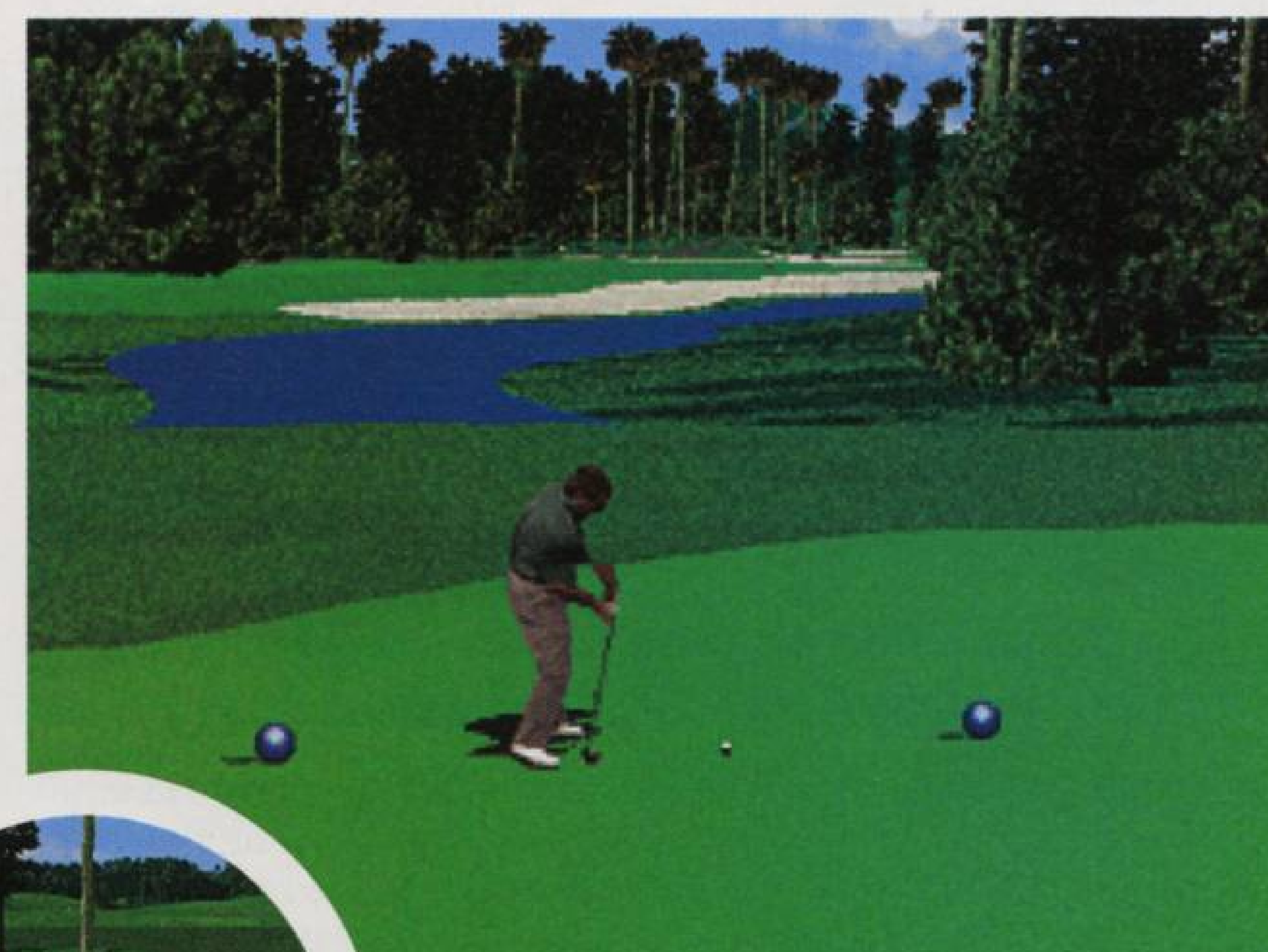


Some views are relatively bland (top) but most are just as lavish as the ones in *World Cup Golf*

Format:	**PC CD-ROM**
Publisher:	**EA**
Developer:	**In-house**
Release date:	**September**
Size:	**1 CD**
Origin:	**US**

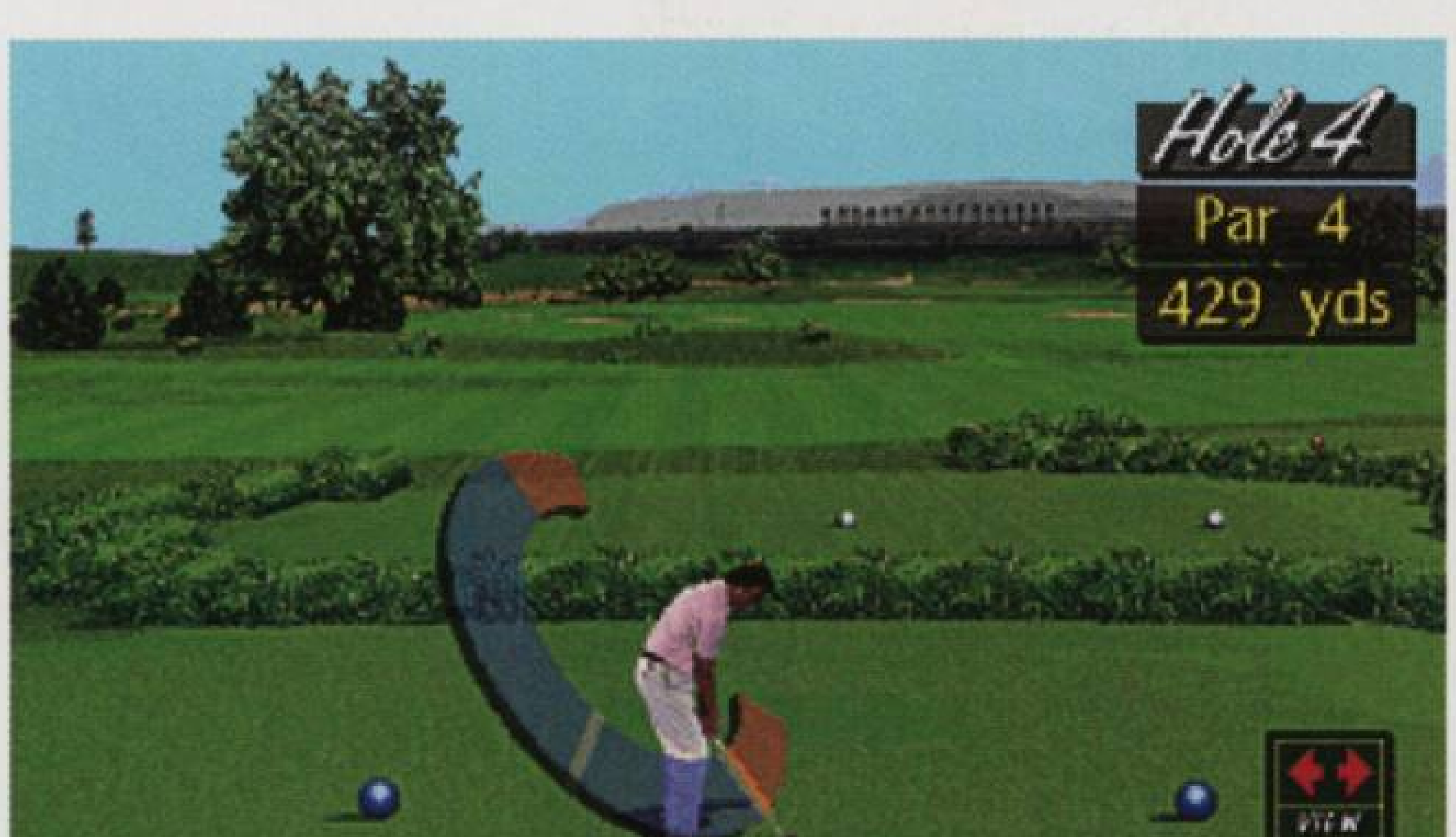
Electronic Arts' new golf sim sees the *PGA Tour* veterans teeing off for another crack at success, with EA's vast experience at creating slick sports sims virtually guaranteeing a playable and intuitive golf game.

Offering three courses and nine fully digitised PGA Tour golfers, all incorporating the strengths and weaknesses of their real-life counterparts, *PGA Tour 486* is designed to present a believable golfing experience with the minimum of statistical baggage. At this stage the playability looks exceptional, with the famous two-click interface of EA's previous golf games gaining further enhancement. Clubs are selected automatically according to players' individual styles and preferences, and, unlike *World Cup Golf*, you determine variables like stance, back spin and power when you swing the club. This means that actually hitting the ball isn't overshadowed by the cumbersome process of setting up the shot – *PGA Tour 486* rewards and penalises only your reflexes.





The default view is from behind the ball. This can be altered to enable you to see past obstructions



The various types of shot are all accessed using this arc. The system is easy to learn but hard to master, especially when the ball lies badly

The game's cosmetics look promising, too. For example, after a player has struck the ball you see a cutaway scene showing his reaction. And, for once, the commentary is not only useful but fairly varied – in many other games, you feel like throttling the speaker after hearing the same ropy piece of digitised speech for the umpteenth time.

World Cup Golf may be visually superior (and it's probably the most accurate single-course golf sim ever) but in terms of longterm challenge *PGA Tour 486* looks set to be another triumph for the *PGA* series.

Electronic Arts' vast experience at creating slick sports sims virtually guarantees a playable and intuitive golf game







The Porsche 911 Carrera (top), Dodge Viper RT 10 (middle) and Ferrari 512TR (bottom) are just three of the cars featured in *TNFS*

Road & Track presents: The Need For Speed

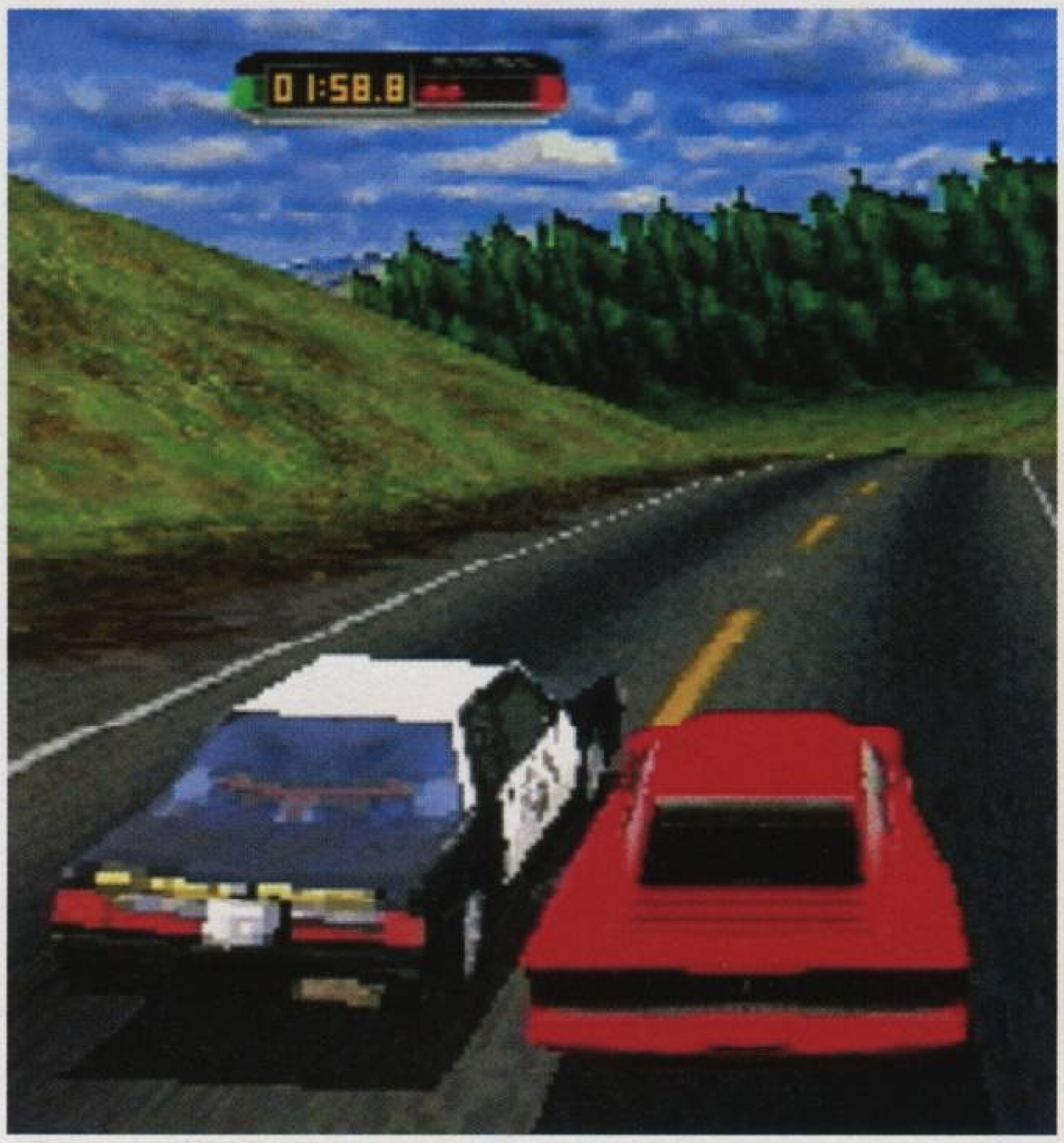
Format:	**3DO**
Publisher:	**EA**
Developer:	**Pioneer Prods**
Release date:	**November**
Size:	**1 CD**
Origin:	**US**

Edge peeks under the bonnet of EA's new 3DO racer – an attempt to give *Ridge Racer* and *Daytona* a run for their money

Driving games are fast becoming the standard way to show off the capabilities of a new system. *Ridge Racer* on the PlayStation, *Daytona* for the Sega Saturn and *Cruisin' USA* for Nintendo's Ultra 64 are all designed to put their respective machines on the map.

Ironically, the 3DO has been around for almost a year now but still can't boast a *Ridge Racer* or *Daytona*. It does have Crystal Dynamics' *Crash 'n Burn* and will soon be treated to *Off-World Interceptor*, but neither of these games are driving sims in the traditional sense. Canadian programming team Pioneer Productions are determined to remedy that deficiency.

Pioneer aren't newcomers to driving games, but *The Need For Speed* is their first attempt at a texture-mapped racer. The game's producer, **Hanno Lemke**, asserts that *The Need For Speed* 'was produced to bring a new level of resolution and gameplay to the 32bit platform.' Visually, *The Need For Speed* wouldn't look out of place in an arcade; from the gorgeous digitised backdrops to the texture-mapped cars and scenery, its graphics are stunning. 'All the surface bitmaps are digitised from real photos and then wrapped over a polygon





The awesomely fast Ferrari provides a tempting target for every cop with a radar gun and an itchy trigger finger. Here, a police car gives chase along the winding mountain roads (left). It can get lonely on the open road (right), but you get an unobstructed view of the scenery



As you enter the tunnel, you can't fail to notice the superbly detailed textured polygons and the realistic handling of light and shadow



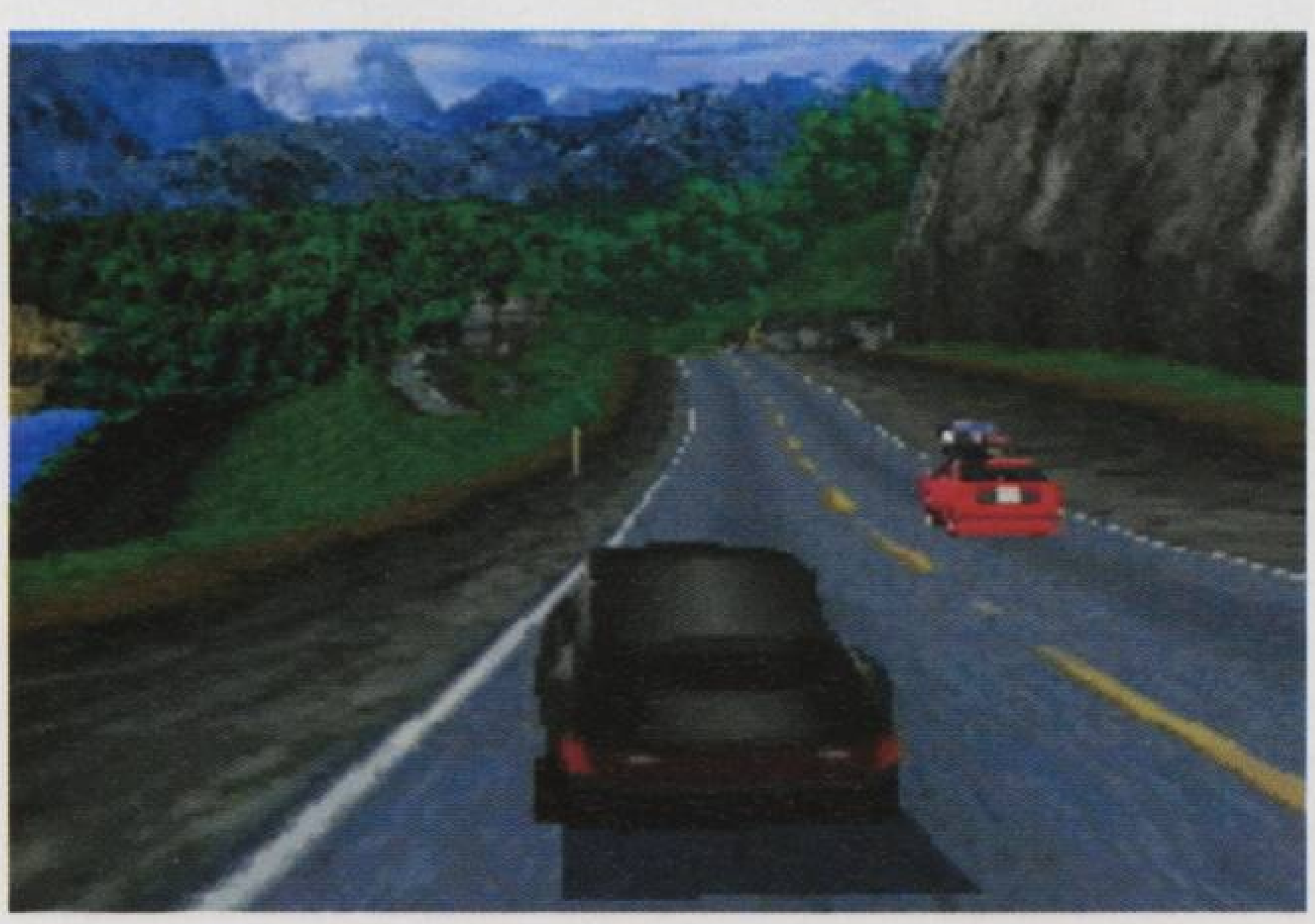


Heavy traffic (top) adds realism to the game. Like most modern racers, ***The Need For Speed*** contains some spectacular crashes (insert). Check out the detail on the underside of that car (above)

'*The Need For Speed* was produced to bring a new level of resolution and gameplay to the 32bit platform'

skeleton,' explains Hanno. 'This creates a rich and realistic environment. We have also developed a unique 3D road rendering system which allows us to draw the road out to infinity. Using this system, we can achieve a very realistic vanishing point on all the roads.'

Pioneer, in collaboration with US magazine Road & Track, have also gone to great lengths to make all the cars in the game perform exactly like their real-life counterparts. According to Hanno, this was achieved by means of 'a very sophisticated physics model which uses statistical information recorded by Road & Track to accurately simulate the performance characteristics of all the cars, covering aspects such as acceleration, braking, handling, top speeds, etc.'



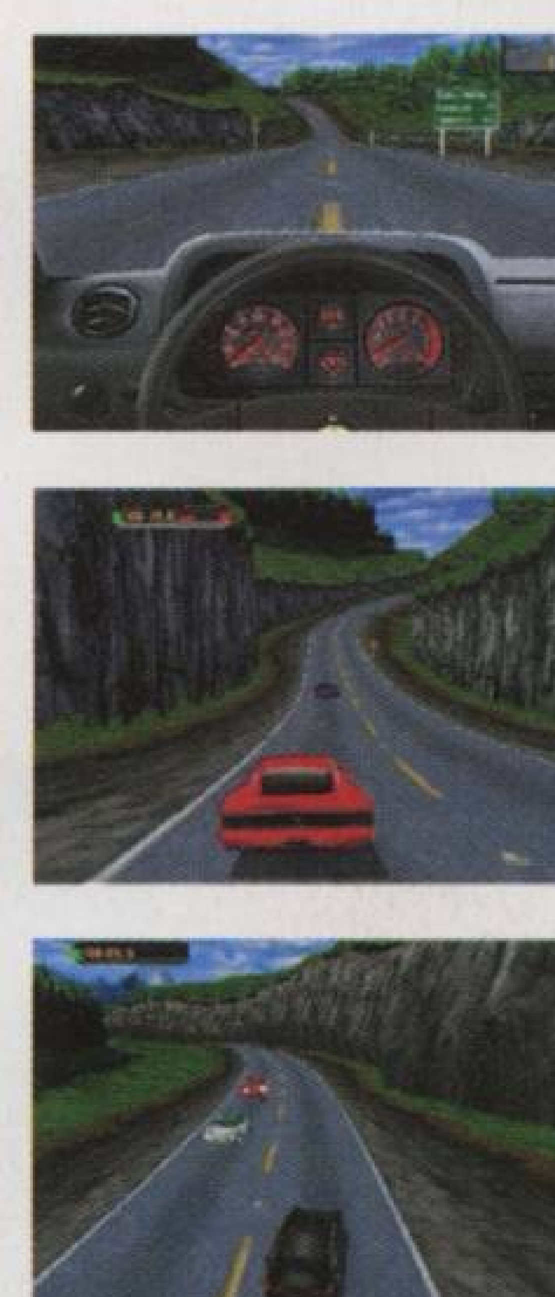
Pioneer are using streaming technology to take track data off the CD on the fly. This results in richer detail and greater depth of field

In addition to the main game, which involves driving some of the fastest production cars in the world around three exotic locations, *The Need For Speed* includes a feature in which you can recreate Road & Track's tests, determining data like 1/4 mile times and top speeds.

Although *Daytona*, *Ridge Racer* and *Cruisin' USA* are the firm favourites on the next-generation starting grid, *The Need For Speed* could well catch them napping when the lights turn green.

Credits

Producer: Hanno Lemke
Development director: Foster Hall
Programmer: Brad Gour
Programmer: Wei Shoong Teh
Programmer: Paul Diamond
Programmer: Dave Lucas
Artist: Markus Tessman
Artist: Sheila Allan
Artist: Scott Jackson
Artist: Tom Graham
Audio: Alistair Hirst



These days, a racing game isn't complete without a selection of viewpoints. ***TNFS*** has three (top to bottom): an in-car view, a chase view, and a helicopter chase view

Little Big Adventure



Little Big Adventure's universe is constructed from *3D Studio*-rendered bitmaps, while the characters and moving objects – in this case the boat – are made from smooth Gouraud-shaded polygons

Edge uncorks what looks like another good vintage from Adeline Software

Format:	**PC**
Publisher:	**EA**
Developer:	**Adeline**
Release date:	**October**
Size:	**1 CD**
Origin:	**France**

In the mid to late 1980s, the Commodore 64 and Sinclair Spectrum played host to a series of superb 3D isometric games. Titles like *Head Over Heels*, *Batman*, *Alien 8* and *Knightlore* were all incredibly playable strategic quests which are regarded today as milestones in game design. Now French developers Adeline are reviving the genre with *Little Big Adventure*, an isometric escapade with the kind of innovations one would expect from the creators of *Alone In The Dark*.

French attempts to pioneer new animation techniques have often been admired, and *LBA* is another laudable effort, combining both Gouraud-shaded polygon characters and SVGA rendered backdrops in a two-pronged stab at reshaping an old game style. It's a prime example of what the French excel at: technically outstanding graphics married with an unusual and witty scenario.

Little Big Adventure is a prime example of what the French excel at: technically outstanding graphics married with an unusual and witty scenario

LBA's storyline centres on an unsavoury individual called Dr Funfrock, who has seized control of your planet and forcibly removed all





Alone In The Dark aficionados will revel in *Little Big Adventure*'s fast, realistic and thoroughly entertaining combat (left). Adeline's superb polygon-based animation system even extends to vehicles, like this Gouraud-shaded polygon tank (right)



In this scene, typical of *LBA*'s ingenuity, our prisoner waits for the best moment to hitch a ride out on a beautifully animated rubbish truck



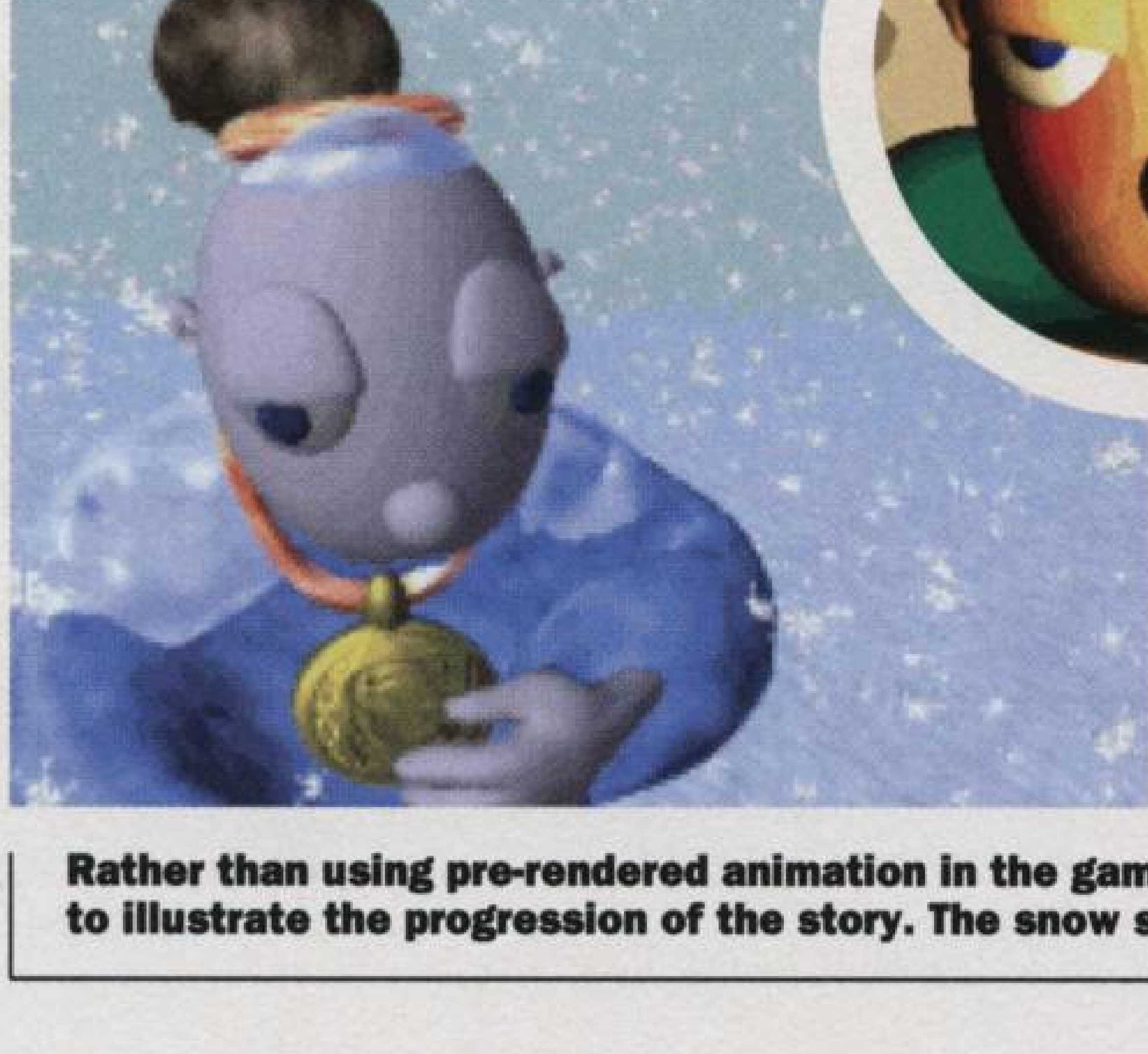


Every backdrop you see in *LBA* is made from a patchwork of textures applied to an isometric framework pieced together like Lego bricks

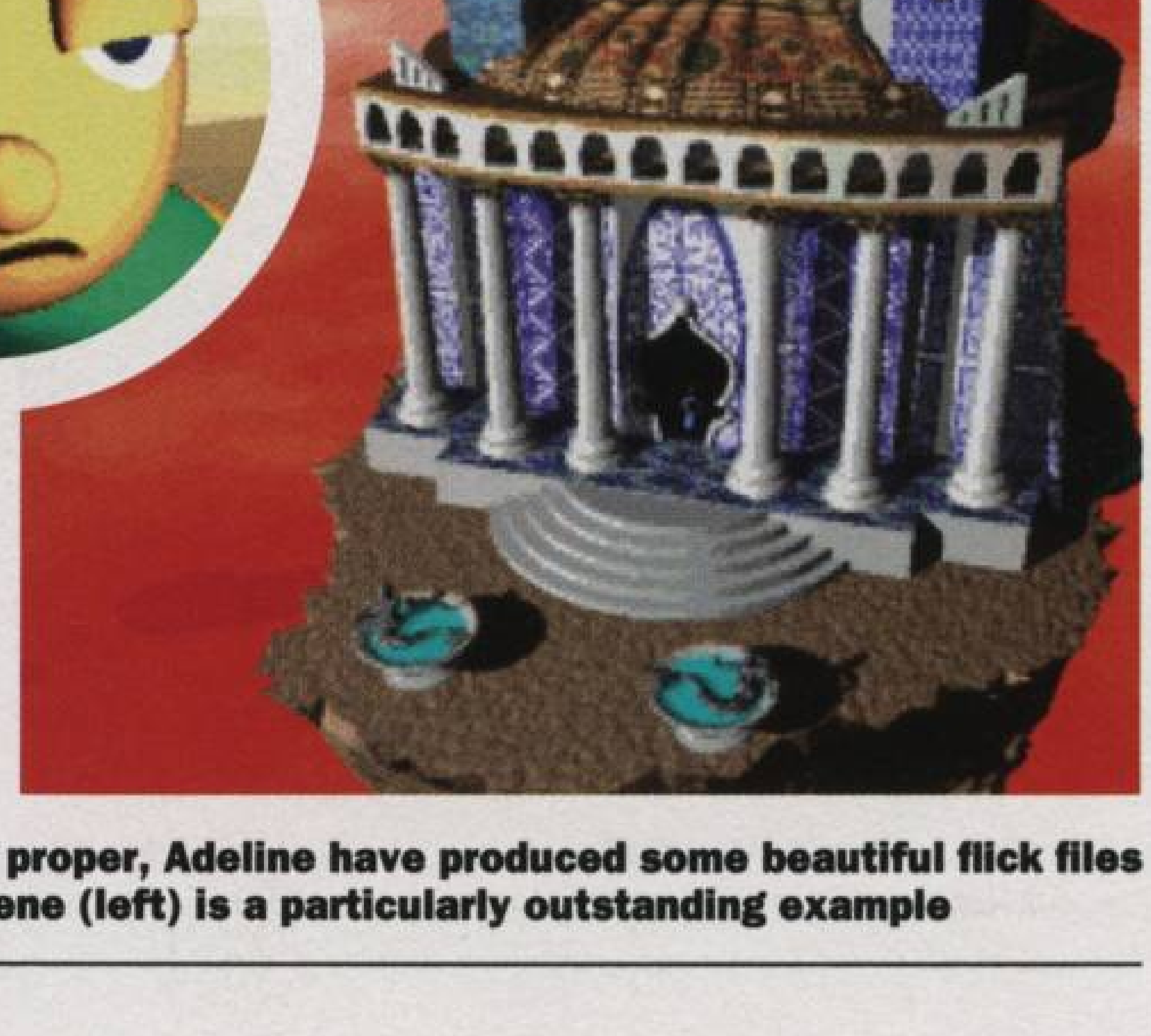
the inhabitants to the southern hemisphere, giving him free rein to conduct his evil activities in the north. You play a character called Twinkel, who has been imprisoned by Dr Funfrock's regime for perpetuating the legend of Sendell, a deity who the downtrodden population believe will one day choose a mortal to rid the planet of all wrongdoing. One night Sendell contacts you in a dream and tells you that you are the chosen one.

Adeline are renowned for their excellent aesthetics, and *LBA* continues the company's honourable tradition with stunning animation and brilliantly designed characters. The animation is driven by what Adeline term a 'Multi-Task Life Engine'. This system, which determines what effects your actions have on your environment, adds an element of 'fuzzy logic' to the various set parameters which govern the interaction between you and the characters and objects in the game. An element of unpredictability is thus

Continued next page







Rather than using pre-rendered animation in the game proper, Adeline have produced some beautiful flick files to illustrate the progression of the story. The snow scene (left) is a particularly outstanding example



Still awaiting some much-needed shading from its animator, this docked ship is just one of the game's large 3D models constructed from fast polygons



Once aboard, you're treated to a pre-rendered sequence. If only all developers used CD-streamed images as intelligently as Adeline

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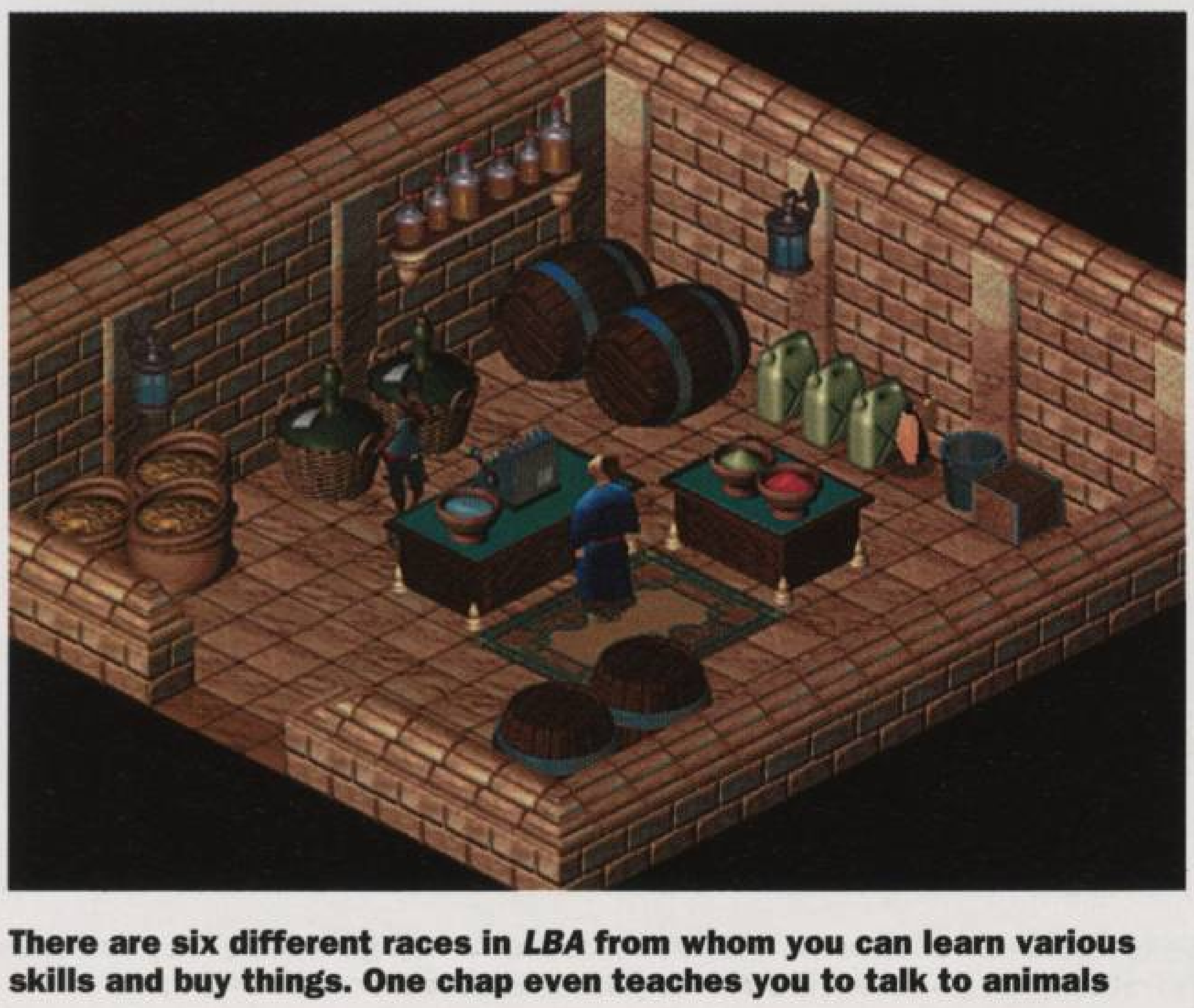
introduced – something that has never been successfully achieved in a videogame before – which means that the characters in *LBA* have a virtually infinite range of reactions to the events they encounter.

The ability to dictate the behavioural mode of your character is another fascinating aspect of the game. There are four modes: 'normal', 'athletic', 'aggressive' and 'furtive'. When you change mode, Twinkel immediately assumes the appropriate posture. Choosing 'aggressive', for example, makes him adopt a pugnacious stance, while 'furtive' has him tiptoeing around with exaggerated stealth. These modes aren't just a gimmick, either; they genuinely affect the way your character acts in various situations and are therefore an integral part of the gameplay.

Although Alone *In The Dark* was universally applauded for its achievements, it was also knocked for the ease with which it could be completed. *LBA*, on the other hand – with 12 immense chapters and over 40 environments, each containing 50 buildings – is so huge that it is reputed to take almost 10 hours of playing time to finish, even if you perform only the essential tasks.

With its original, non-linear structure, varied collection of puzzles, great fighting action and superlative graphics, *Little Big Adventure* is a game that is destined to make waves when it crosses the Channel later this year. Next issue **Edge** visits Adeline and other leading French developers for an inside view of the Gallic videogames industry.

Characters in *Little Big Adventure* have a virtually infinite range of reactions to the events they encounter



There are six different races in *LBA* from whom you can learn various skills and buy things. One chap even teaches you to talk to animals

Rayman

It's undoubtedly pretty, but will the Jag's flagship platformer send Mario running for cover? **Edge** isn't so sure





With 24bit colour and beautifully drawn characters, *Rayman* is undeniably good-looking. But it's gameplay, not graphics, that will sell it to the Mario generation



Before entering each area of Hereitscool, you're introduced to the inhabitants and given a glimpse of the local architecture

Format:	**Jaguar**
Publisher:	**UBI Soft**
Developer:	**In-house**
Release date:	**TBA**
Size:	**16 Mbits**
Origin:	**France**

It's a matter of record that no console has ever succeeded without a cutesy platform game. Ever since *Super Mario Bros* first appeared on NES screens, every home machine has been obliged to offer its own equivalent to Nintendo's seminal platformer, and players have felt equally obliged to devote substantial portions of their life to playing them. With both Mario and the pretender to the platform throne, Sonic, still enjoying unmatched popularity, the Jaguar's contribution to the genre needs to be impressive to make any kind of impact.

And that contribution is *Rayman.* The game plunges you into the computer-generated fantasy world of Hereitscool, a product of the imagination of Jimmy, a ten-year-old boy. Within this world Jimmy is The Rayman, a character with the power to animate objects around him. Rayman is striving to protect Hereitscool from an evil presence threatening Jimmy's make-believe world and save his imaginary friends before it's too late.

Because the NTSC version trundles along at only 30 frames per second (most platformers run at 60fps), the animation in *Rayman* is gloriously smooth. Rayman himself can call on over 50 animation sequences, and he meets more than 50 detailed enemies during his ten-level journey. All this takes place within a playing area 40 screens long and four high.

With the game obviously aimed at a young audience, crunch time for *Rayman* is Christmas, when it will be up against Nintendo's *Donkey Kong Country.* It could be tough going for the Jaguar.

Because the NTSC version trundles along at only 30 frames per second, the animation in *Rayman* is gloriously smooth



Humorous touches like this abound, and will go a long way towards making *Rayman* attractive to young children come Christmas

A-Train IV

A-Train made it big in Japan, but its loco-based gameplay didn't travel. **Edge** thinks this PlayStation version could be just the ticket

Format:	**PlayStation**
Publisher:	**Artdink**
Developer:	**In-house**
Release date:	**December**
Size:	**1 CD**
Origin:	**Japan**

There's a definite stigma associated with trains in this country. Maybe it's something to do with the anorak-wearing geeks one sees puffing frantically along the platforms of Waterloo Station shouting numbers into dictaphones late on Friday evenings. But whatever the reason, it's a prejudice that *A-Train* has had to contend with. Despite being regarded by many Japanese as one of the greatest simulations ever, the game has never attained the same status over here as its contemporaries.

The *A-Train* journey began in Japan in 1986 on the Fujitsu FM series of computer, and the acclaim with which it was greeted led to speedy conversions for most other Japanese formats. In 1990 the third game in the series, *Take The A-Train III*, was released in Japan, and was voted simulation of the year by Login magazine (tying for first place with *Sim City*). It wasn't until 1992, though, that the UK was treated to *A.III*, called simply *A-Train* over here.

Trains actually make up only about a third of the *A-Train* experience. In the first part of the game your object is to make money for yourself by supplying a burgeoning city with a rail network. When this vital infrastructure is established, you start to expand your holdings by constructing a range of other buildings, including office blocks, amusement

With *A.IV* benefiting from *A-Train*'s varied gameplay as well as the power of Sony's hardware, it's sure to be the videogames equivalent of the InterCity 125 rather than your local Sprinter

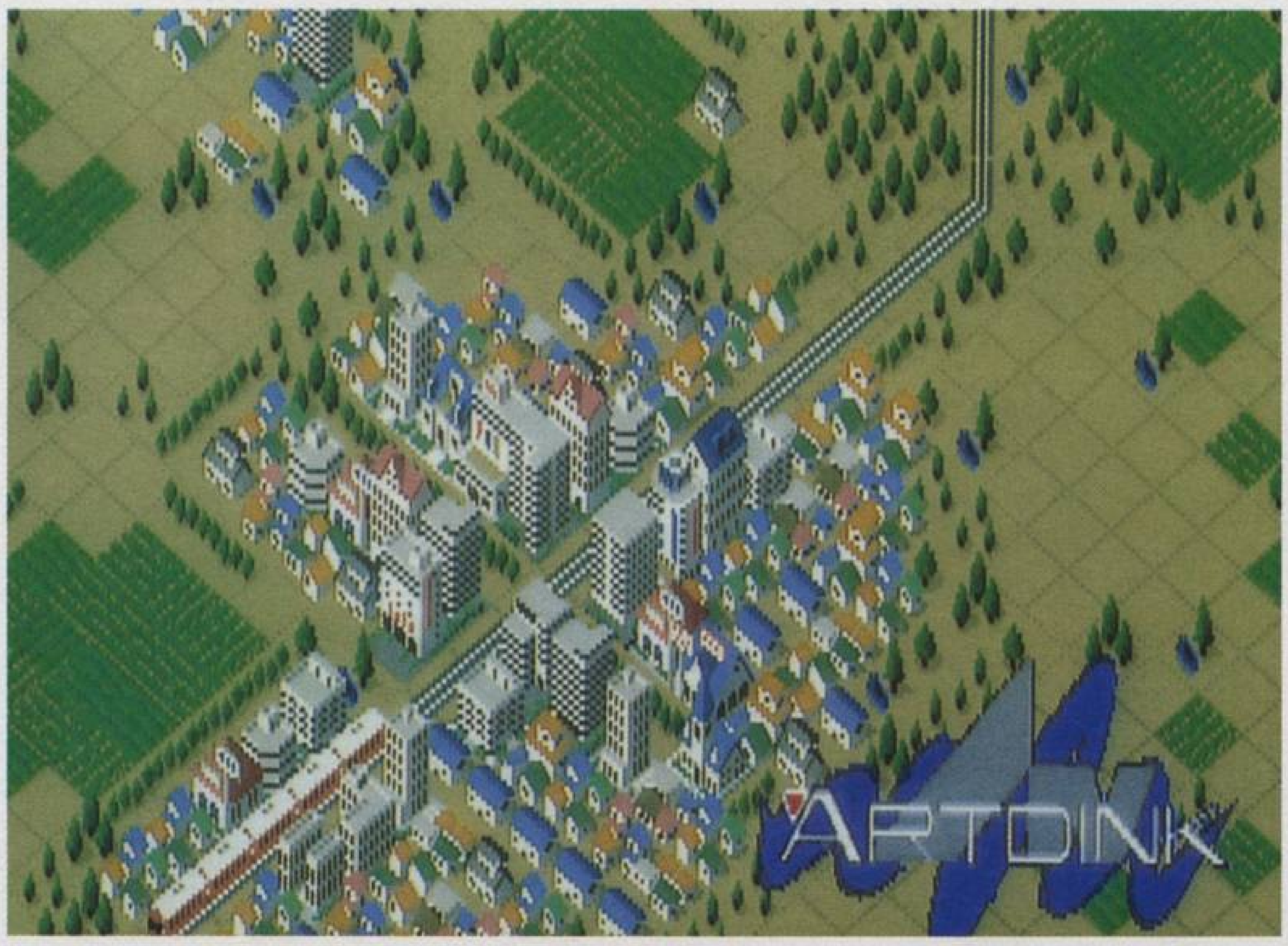








A useful innovation in the PlayStation version of *A-Train* is the ability to travel around your city on the tracks you've laid. This enables you to survey what you've created and adds to the satisfaction gained from the game



The isometric view common to all versions of *A-Train* will be retained in the PlayStation game. Texture mapping and extra detail will also be added







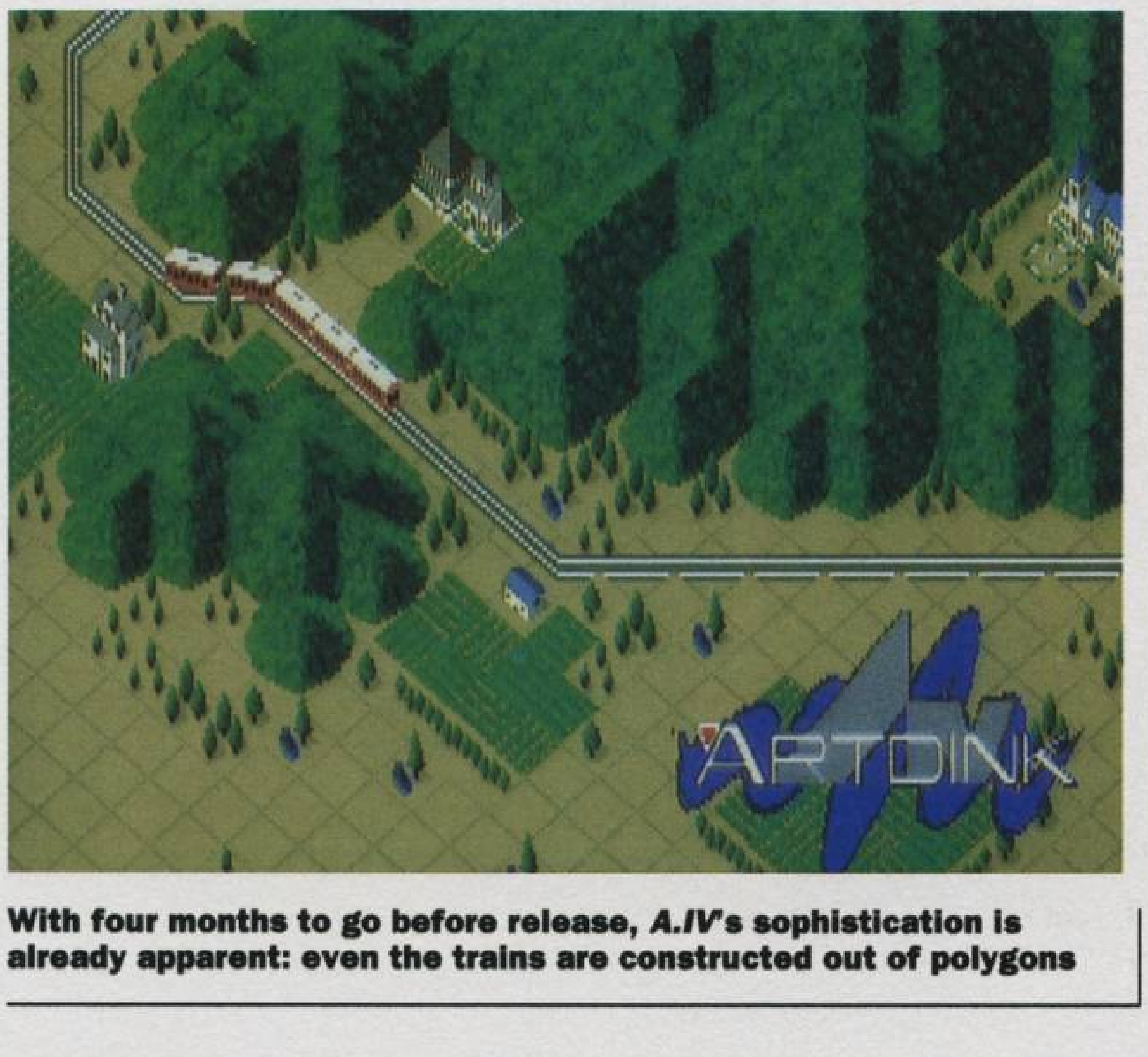
The PC version of *A-Train* currently available in the UK may look primitive now, but it's still a decent sim

parks and ski resorts, to complement your rail developments. At the height of your commercial success, you move into the final phase of the game, which involves playing the stock exchange to increase your fortune.

Artdink, *A-Train*'s Japanese creators, have now decided to release two new versions. A *Windows* conversion, looking incredibly detailed with its 256-colour SVGA graphics, is already onsale in Japan. But the platform upon which Artdink's efforts are now being concentrated is the PlayStation. Unlike the *Windows* game, which is not scheduled for UK release, PlayStation *A-Train* – otherwise known as *A-Train IV* or *A.IV* – is something British players should be able to experience.

Due to be available when Sony's machine is launched in Japan, *A.IV* will not be taking any risks: the basic isometric playing view common to all other versions of the game will be retained. Artdink have promised many enhancements, though: the main addition will be the ability to survey your progress by travelling around your city on the railways you've built.

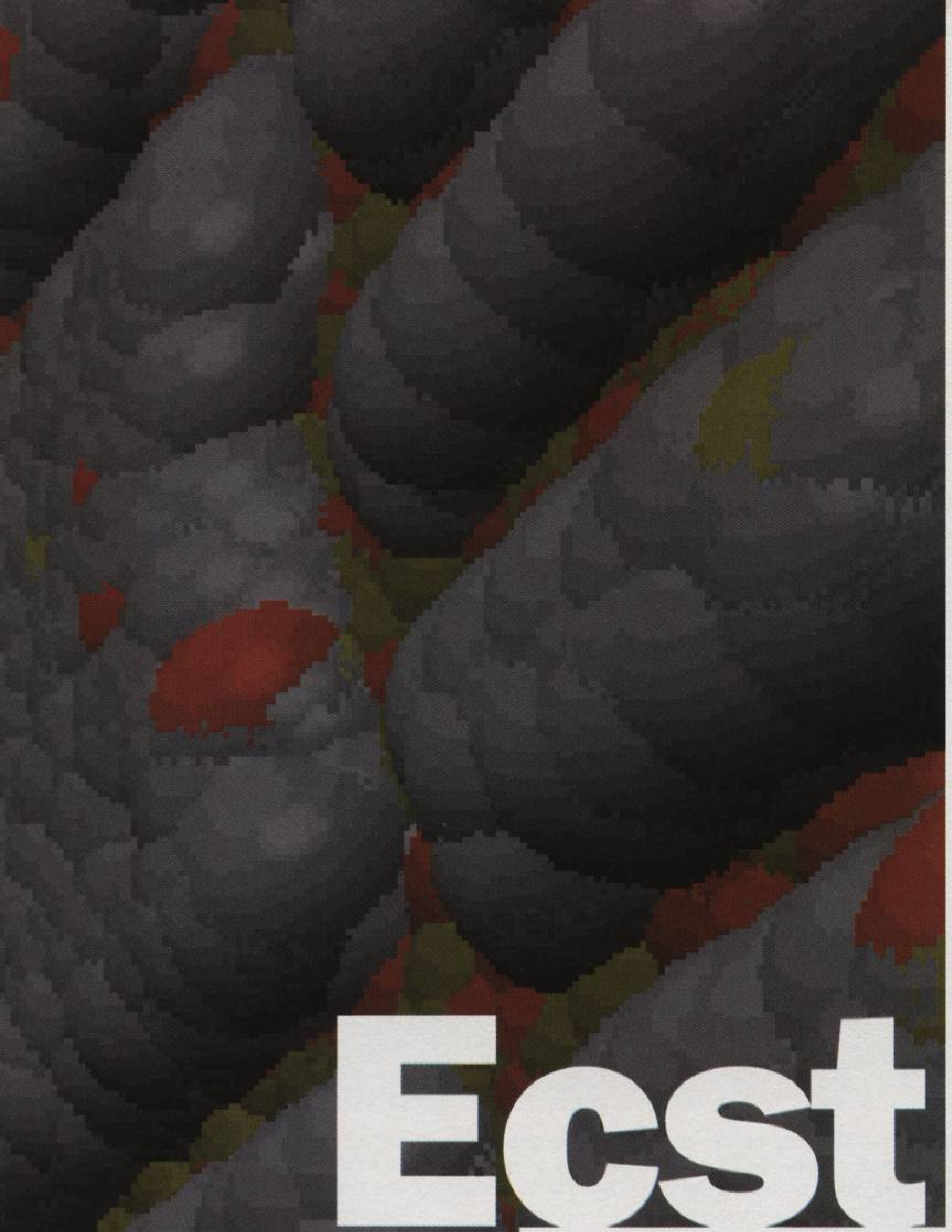
The game is still a long way from completion, but the version **Edge** saw already includes some impressive 3D effects. Each building is individually detailed, the trees are all a unique shape, and the railway tracks, which are raised slightly and come complete with genuine-looking stone chippings and wooden sleepers, are sufficiently realistic. Although the PlayStation isn't capable of resolutions as high as some SVGA modes (due to the comparative low-res display of television sets), the game's programmers are making great use of the PlayStation's texture-mapping abilities, which should mean that the original graphics will be significantly improved.



With four months to go before release, *A.IV*'s sophistication is already apparent: even the trains are constructed out of polygons

By the end of the year, *A.IV* will be going head to head with *Sim City 2000* on the Saturn, but until a English-language version appears it will be difficult to know if it's cut of the same fine cloth. One thing *is* certain, though: with *A.IV* benefiting from *A-Train*'s impressively varied gameplay as well as the power of Sony's hardware, it will be the videogames equivalent of the InterCity 125 rather than your local Sprinter. E

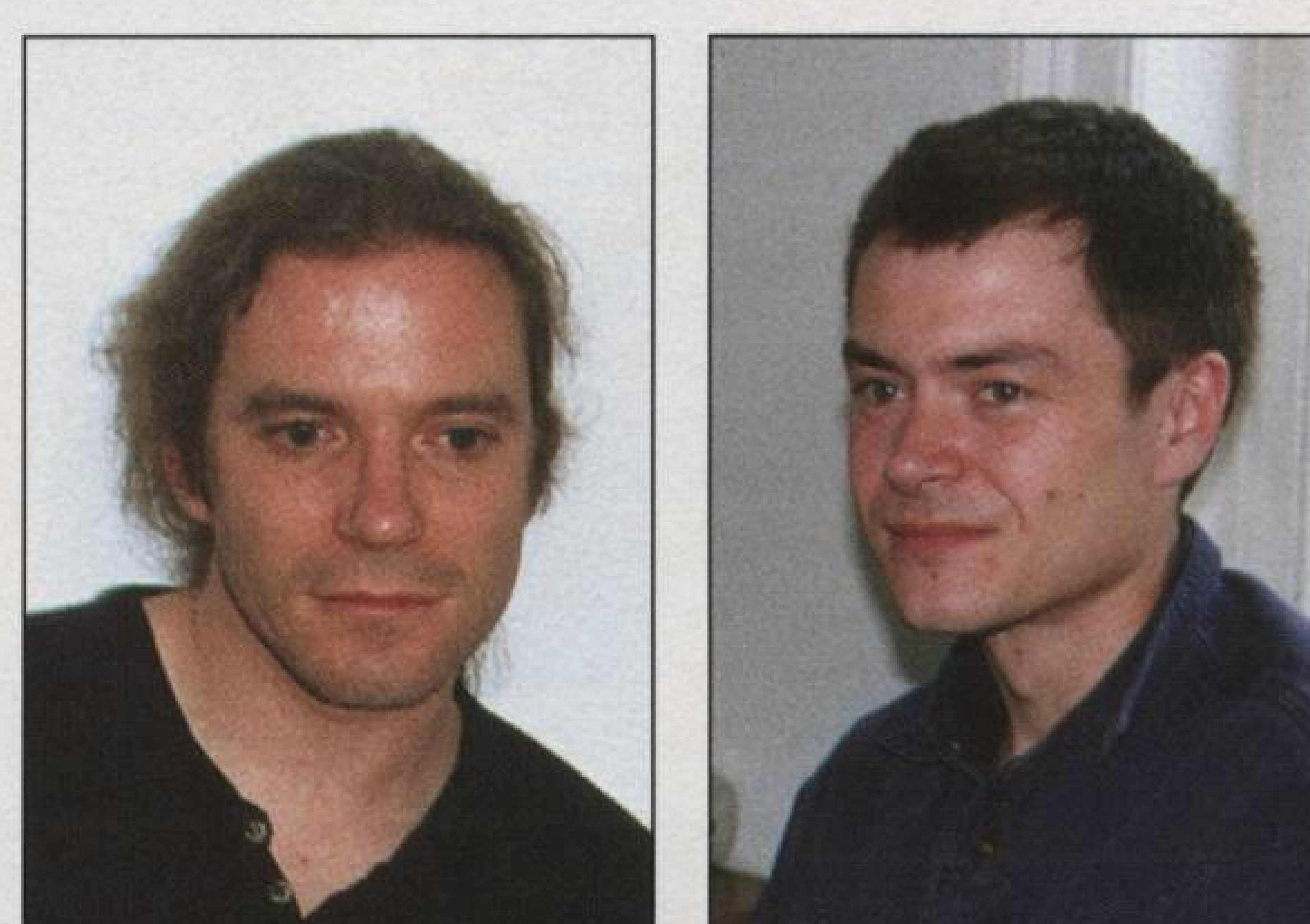




Ecstatica

Ecstatica is a cinematic 3D adventure with realtime appeal. **Edge** meets the duo reinventing the interactive movie

Format:	**PC CD-ROM**
Publisher:	**Psygnosis**
Developers:	**A Spencer**
	A Maindron
Release date:	**Nov '94**
Origin:	**UK**



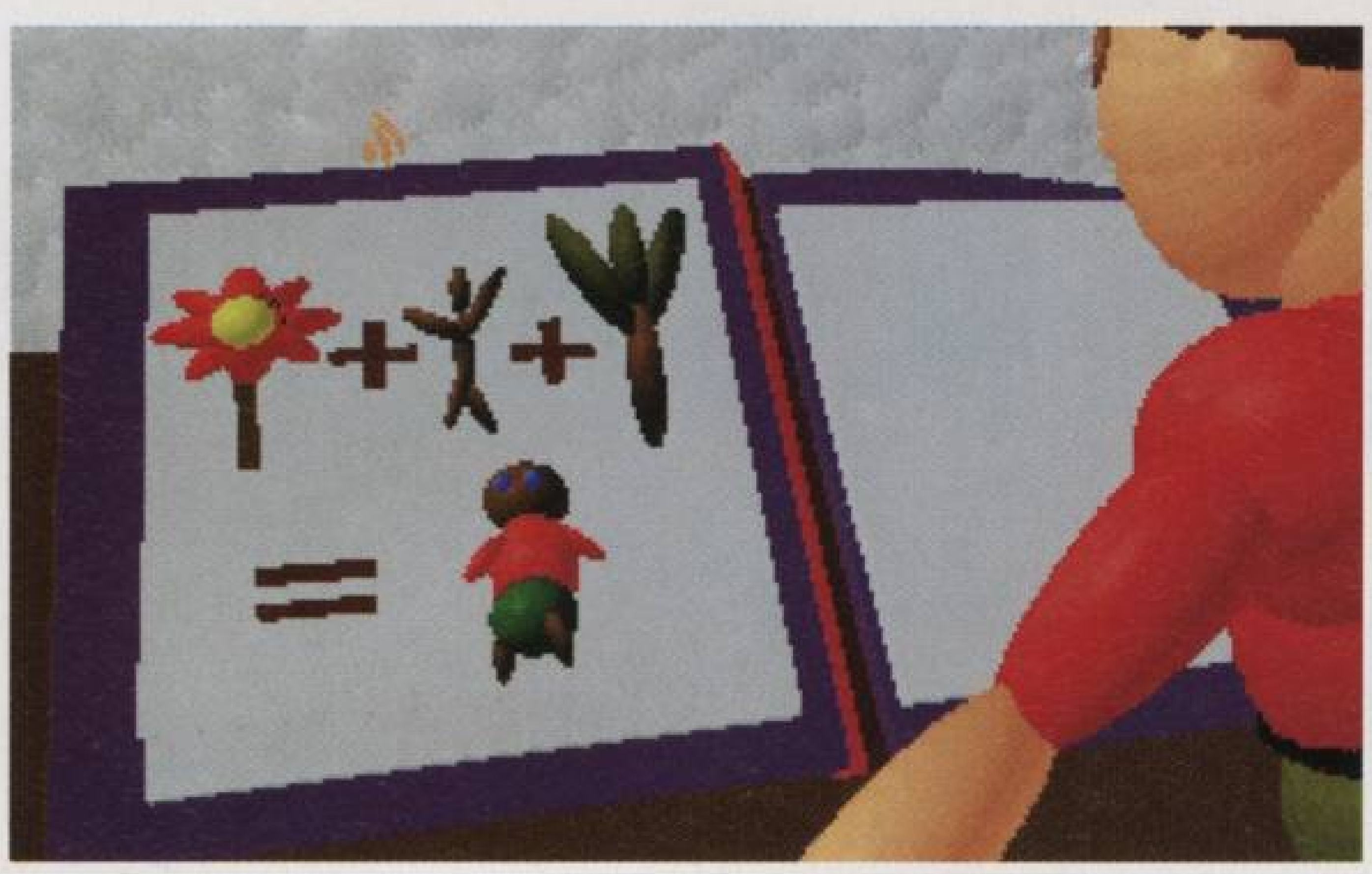
The Programmer and The Artist: Andrew Spencer (left) and Alain Maindron, the creative partnership behind *Ecstatica*

Andrew Spencer admits that he's not really interested in computers. 'Sometimes I even get lost in my own game,' he confesses. This seems a strange statement for a programmer to make, but Andrew is not your average jobbing coder. As sole programmer of *Ecstatica*, he is the creator of what is potentially one of the most exciting and technically innovative PC games this year.

Before he even started producing the game, Andrew laboured for three years doing the spadework for it, a process which began on a Commodore 64 shortly after the release of his only

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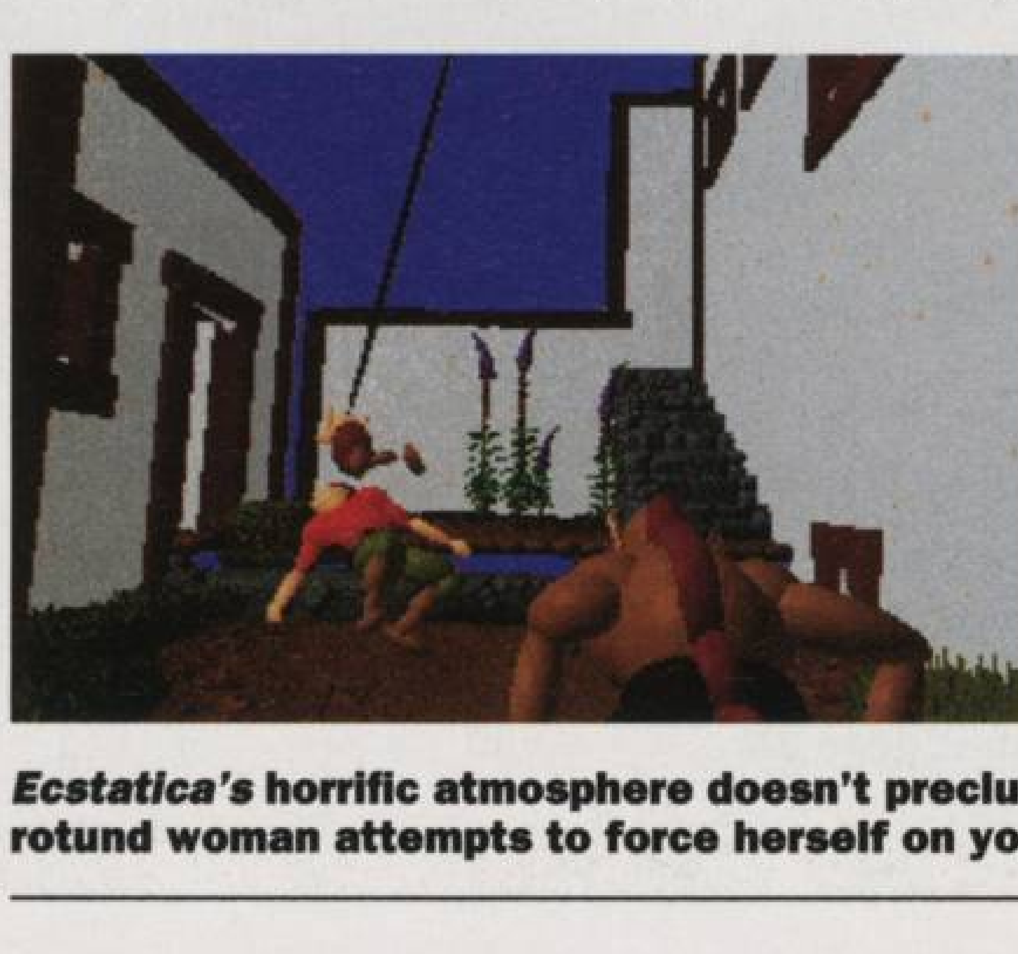
The detail in many of the external locations is breathtaking (above). These plants are all unique (they also provide a range of good hiding places). Locating spell components (left) is vital to defeating the tougher enemies

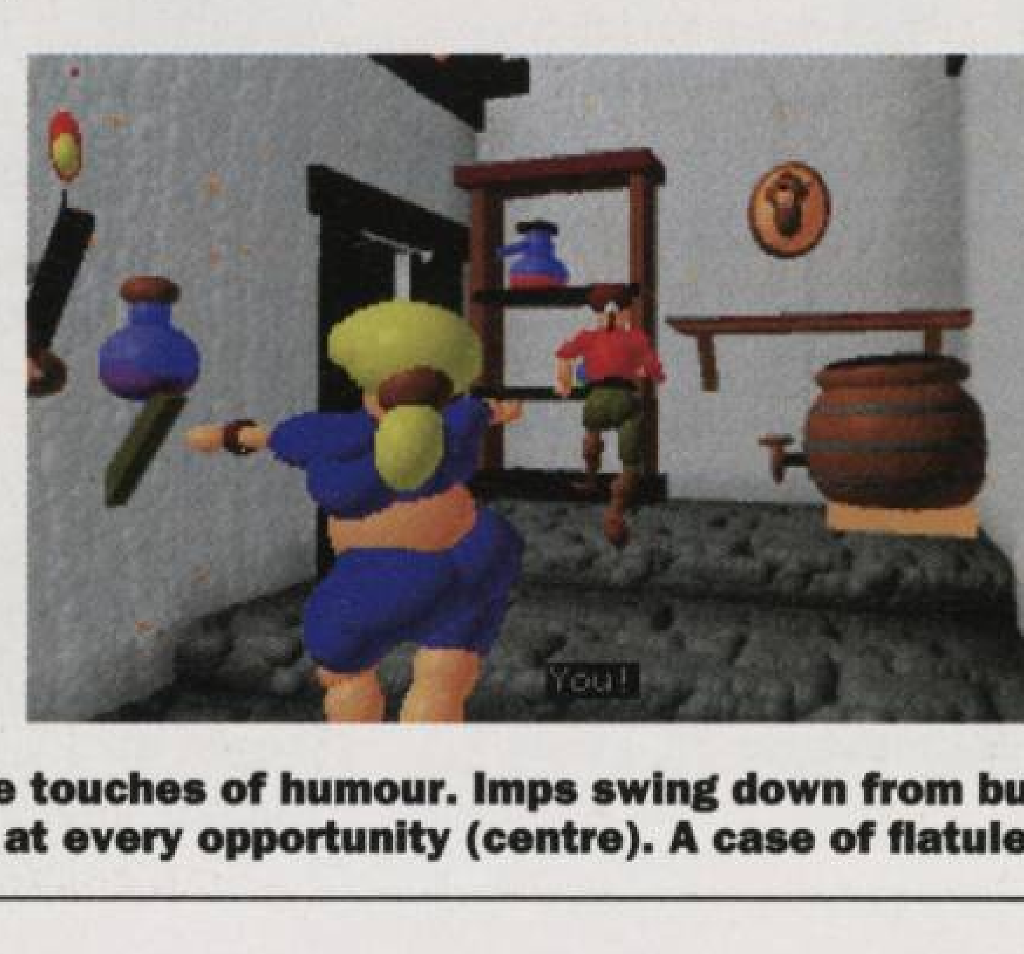
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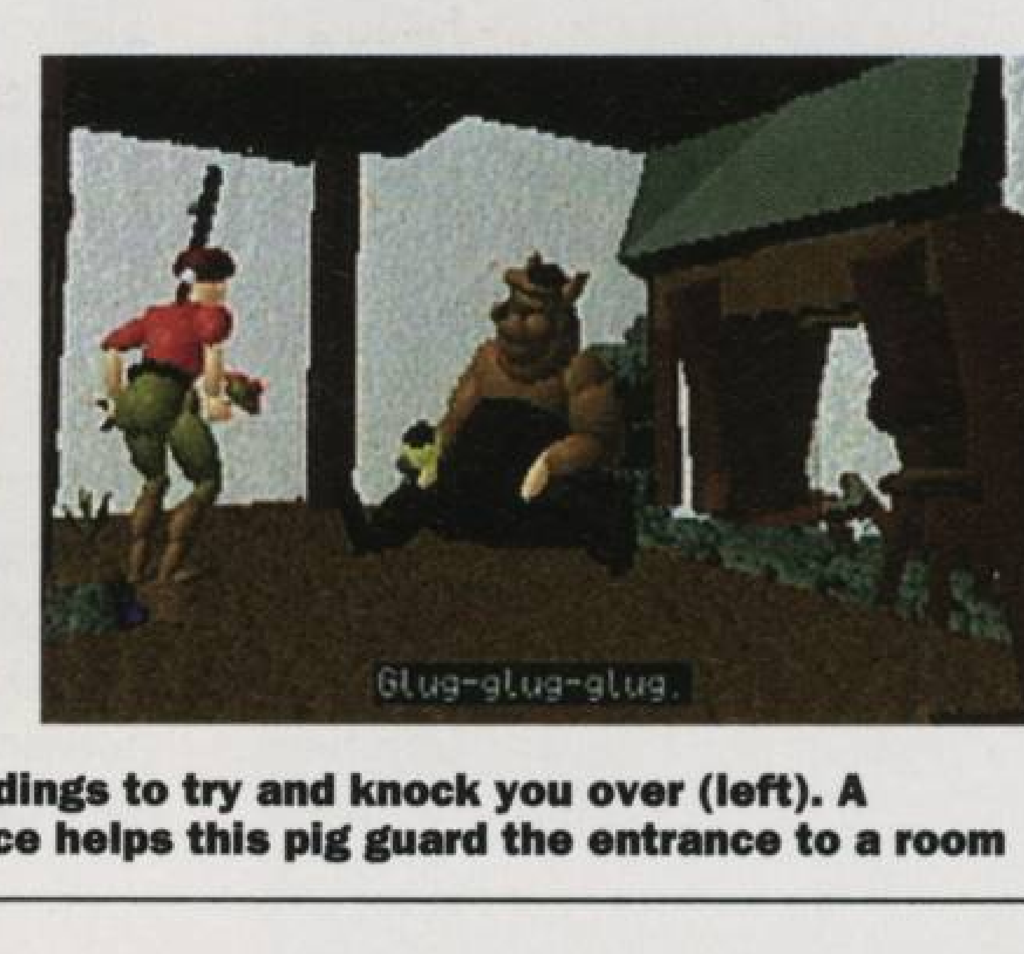
other well-known program, the best-selling *International Soccer* for the C64. 'The whole philosophy of *Ecstatica* is to separate creativity from programming,' he explains. To this end he devised one of the most advanced software development tools in the world, which, when finished, enabled him to concentrate on the overall design of the game without getting bogged down with the nuts-and-bolts process of programming the graphics.

After having spent so long nursing it to its current state, Andrew is understandably wary of revealing precise details about his system. However, his three years' work is evident in *Ecstatica* (which has taken a further two years to bring to its current state). The game is different to other 3D titles – such as *Alone In The Dark* – in that instead of employing polygons to create 3D images, its graphics are composed almost entirely of ellipsoids (although some triangles are also used). Not only does this allow the creation of more realistic-looking characters with soft, rounded and aesthetically pleasing shapes, but it also allows a far more effective impression of movement than can be achieved with polygons. Andrew is convinced of the logic of his approach: 'Mickey Mouse used circles because they are the easiest shape to keep constant from one cel to another,' he argues. 'The use of ellipsoids lets us take this a step further.'

Most of the time Andrew spent developing the system was devoted to trying to make movement as natural as possible. The system, based on the technique of 'inbetweening' in which a start and an end frame are supplied and the computer provides the frames in between according to the user's instructions, is remarkably efficient at producing both the basic characters and frames of







Ecstatica's horrific atmosphere doesn't preclude touches of humour. Imps swing down from buildings to try and knock you over (left). A rotund woman attempts to force herself on you at every opportunity (centre). A case of flatulence helps this pig guard the entrance to a room



Pre-set animations will feature in *Ecstatica*, but most will last only a few seconds, allowing the plot to develop without jeopardising interactivity

animation: smallish objects require one to two hours of work to model and a similar amount of time to animate, while a major character may take around a day to create, with mapping out its movements occupying only a further two days at most. This is a fraction of the time taken using conventional animation techniques, and the results, according to Andrew, are better. The work behind it all is apparent in the pages of seemingly incomprehensible algebra which Andrew ruffles through nonchalantly while he's talking.

This achievement is especially impressive when you consider that Andrew is almost completely self-taught, although he spent a brief period as a Cambridge maths student and subsequently failed a computer science degree at York University. 'Cambridge didn't really teach me anything,' he maintains. 'I was already fairly good at maths.' A good job, too: *Ecstatica* is an extremely maths-intensive program.

'The writing's on the wall for films as the pre-eminent form of entertainment. They will be replaced by games in the foreseeable future'

When the system was finished, Andrew realised that he would need help to produce the game itself. He cast around for suitable collaborators and eventually met **Alain Maindron** through a mutual friend. Alain, a professional animator who has worked on such films as American Tales 2 using traditional cel techniques, had never used computer-based animation methods before. He was, however, immediately impressed with Andrew's system. 'Inbetweening is impossible to do properly with 2D characters because the computer does not have enough information to go on. With threedimensional characters such as these, however, it's much faster and more flexible than any traditional method,' he enthuses.

Andrew may have created the technical foundation for *Ecstatica*, but it was Alain who provided the imagination, bringing a cinematic philosophy and his considerable film experience to the project. 'We immediately decided that we didn't want to create a game in the traditional sense,' asserts Alain. Both men firmly believe that videogames will increasingly take on the traditional role of films, and their intention from the beginning was to create something incorporating cinematic qualities.

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Building a 3D world

All the static locations in *Ecstatica* were created using the same five-stage process (below, from top).

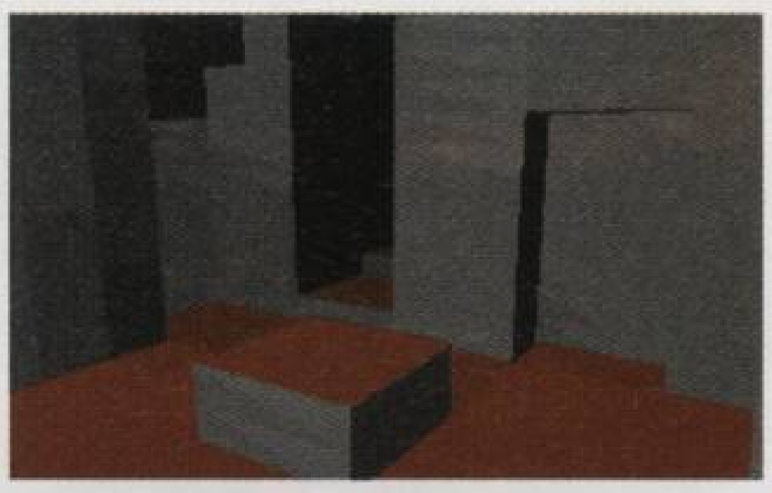
First, the backgrounds are pieced together by Alain, using simple building-block shapes. It is at this point that the camera angles are selected, with the main criteria being visual impact and cinematic feel.

Next, the basic textures are added. This provides an indication of how the finished room will look and offers a chance to redesign any aspects.

In the third stage, anti-aliasing is employed to enhance the texture mapping. This smoothes edges and increases the number of colours to make the light sourcing more realistic.

The fourth stage sees the addition of the room's fixtures and fittings. These are created using ellipsoids, like the characters, and are designed to give each location a unique atmosphere.

Finally, moving objects (in this case the candle flames) and the characters themselves are added. These are 'layered' so that objects closer to the screen pass in front of more distant ones.











prescreen





A hanged and mutilated priest is discovered in his ruined church (above). *Ecstatica*'s violent scenes (left) are definitely not for the squeamish





Throughout your travels you're reminded of the current situation in the village and its environs (middle). This werewolf is the bane of your early explorations (above)

'The writing's on the wall for films as the pre-eminent form of entertainment,' says Andrew. 'They will be replaced by games in the foreseeable future.'

This thinking had a significant effect on the development of *Ecstatica*'s gameplay. 'We've aimed to get people totally involved in *Ecstatica*,' says Andrew. 'Menubars, boxes and statistics are the scourge of atmosphere in games so we've designed the system to work without them. We want people to forget that they're playing a game.' (One result of this is that, instead of objects and weapons being accessed via separate screens, your character carries everything he possesses in his own hands.)

In *Ecstatica*, Alain has created a believably horrific fairy tale using cartoon-like characters – an unusual but remarkably effective combination. You play a weary traveller searching for water after many hours in the saddle. Leaving the beaten track, you stumble upon a mysterious village high up on a plateau. After confronting a series of bizarre monsters, you realise that the village is devoid of human inhabitants. As you progress, the game unravels into a phantasmagorical tale of love, torture and rescue.

The game world consists of over 250 interconnecting locations, many of which are subdivided into smaller areas, encompassing the village, the surrounding fields, the local castle and various other nearby buildings. Texture mapping is used throughout to accurately reflect the character of each location.

The quality of the game's visuals is readily apparent, with Andrew's ellipsoid characters making a significant contribution – anyone who has railed against poorly digitised actors laid on top of unimaginative rendered backgrounds will find *Ecstatica* refreshing. Basic characters like the bat and the seagull are essentially one ellipsoid with a couple of triangles for wings (although they're none the less effective for their simplicity), while major figures, such as the werewolf and the game's hero, are generated by overlapping up to 80 ellipsoids plus triangles. The result

Continued



The sense of scale provided by some locations is excellent. The camera angles are designed to show each room's best features while retaining playability





All the character animation is very smooth (top). In the monastery, two monks pray before a crucifix (above)

is greater variety, higher detail and more realistic animation than PC gamers will be used to. And it's not just the characters which benefit from such high aesthetic values; the backgrounds are equally sumptuous.

Alain's movie background is evident in the game's variety of meticulously planned camera angles. He has also created 700-800 special animated sequences, calculated on the fly rather than pre-stored, which play when you attempt certain actions. Alain's intention is to integrate these scenes so effectively with the gameplay that the player won't even notice he's lost control; if the player is just left sitting in front of the screen wondering why he's having to watch the same piece of unnecessary animation yet again, Alain knows he's failed.

Anyone who has railed against poorly digitised characters laid on top of unimaginative rendered backgrounds will find *Ecstatica* refreshing

Neither the scenery nor the characters are compressed, which means that *Ecstatica*'s graphics currently swallow an 80Mb chunk of the CD upon which the game will be released. This figure is bound to rise as anti-aliasing adds more colours to the characters. The sound and voices have yet to be accommodated on the CD, and these will probably take up at least the same amount again.

To provide the sound for *Ecstatica*, the game's producer, Greg Duddle (on behalf of the publishers, Psygnosis) brought in professional actors and sound effects technicians. Fearing that using outsiders would dilute his and Andrew's original vision, Alain himself provided a complete set of dialogue and sound effects which the professionals could imitate, thus ensuring that the atmosphere of the game would be preserved. The soundtrack is not yet finished, but Andrew maintains that it will 'scare the shit out of people'.

***Ecstatica* will** almost certainly be released bearing an '18' certificate. The game does contain some fairly graphic images – hanged priests covered in blood, girls impaled on swords, your character being systematically punched in the face by a werewolf – but they're not gratuitous. Scenes like this are essential to the plot, and without them the game would lose much of its impact.

Even before *Ecstatica* is complete, Andrew is looking to the future; he already has plans to release a follow-up, probably with a more contemporary theme. 'I haven't spent the last five years creating just one game,' he says. 'I now have this system and there will be sequels.' He is also reluctantly considering leasing his development tool for use in other people's games, but won't be drawn on whether he has intentions to create his own games for other systems.

It's a striking indication of the way the games industry is changing that a title like *Ecstatica* is the brainchild of two people who admit to never playing videogames. If *Ecstatica* is successful, we can expect the tentative relationship between the videogame and film industries to develop into a much closer union. E

Credits

Programmer: Andrew Spencer
Animation/storyline: Alain Maindron
Producer: Greg Duddle
Music and sound FX: Pearl Studios
Sound co-ordination: Phil Morris

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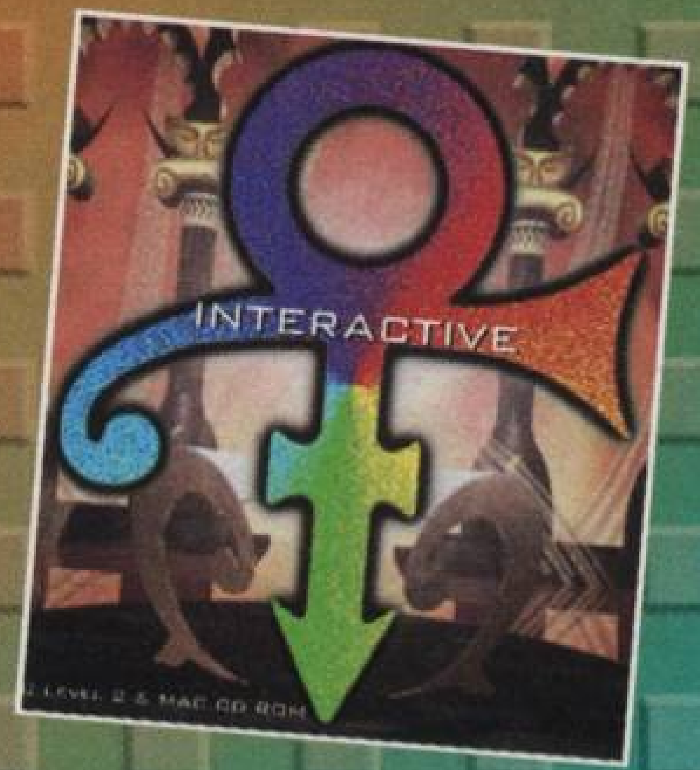
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Testscreen

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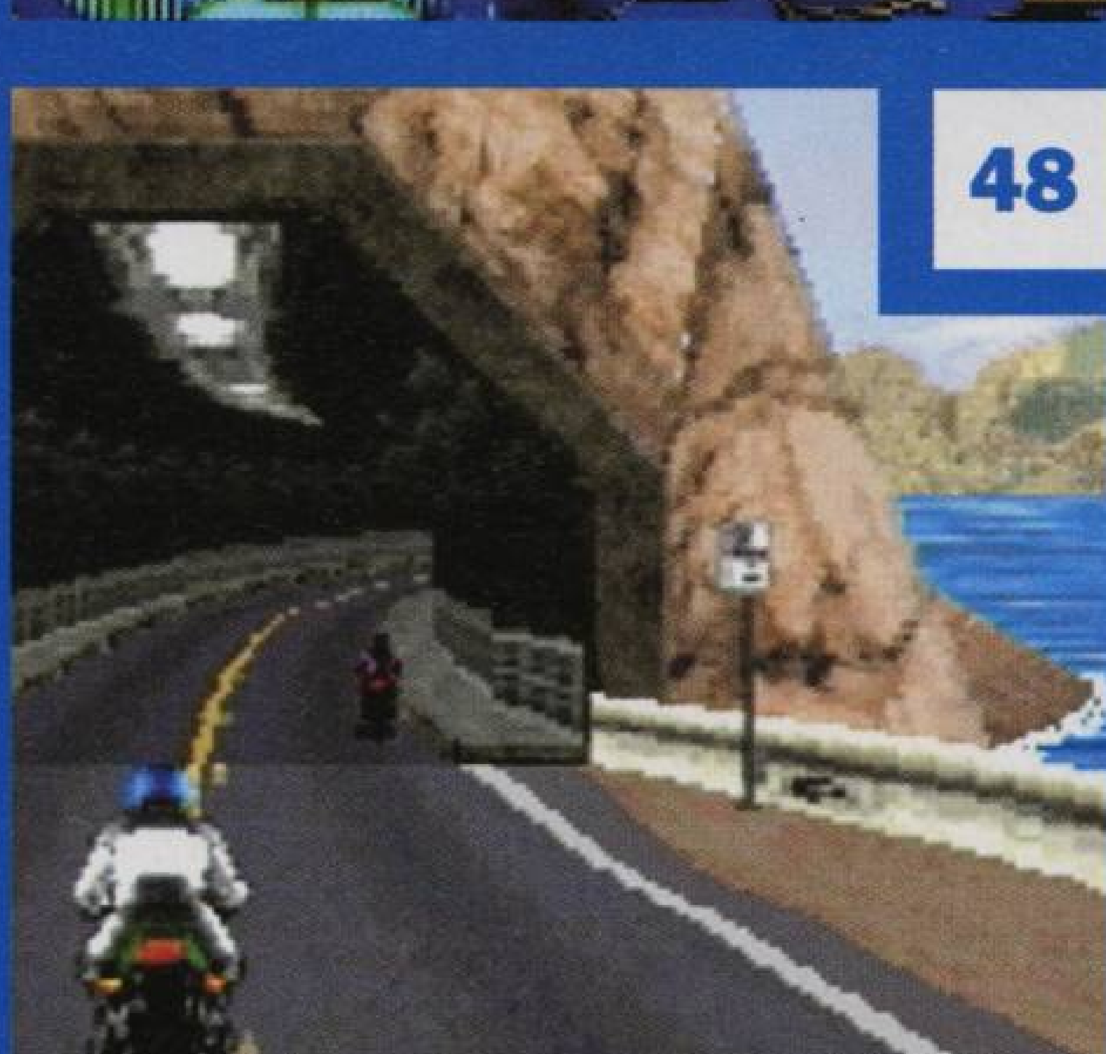
Times have changed. At one stage, rumblings of discontent about the dearth of 3DO software threatened to topple the machine into the abyss of obscurity. Now the balance is tipping in the 3DO's favour – to the apparent detriment of the PC this month. But quantity isn't synonymous with quality: *Burning Soldier* is the worst game the 3DO is ever likely to see, while *Alone In The Dark* and *Star Control II* are both unremarkable PC conversions. Only the excellent *Road Rash* stands out as a game that may actually seduce people into acquiring a 3DO.

In comparison, top 16bit software like *Earthworm Jim* and *Mortal Kombat II* is now starting to look decidedly primitive – although both games will no doubt be well received.

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48



60



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64

Road Rash

Format:	3DO
Publisher:	EA
Developer:	In-house
Price:	£50
Size:	1 CD
Release UK:	Out now

Electronic Arts have clearly adopted a two-pronged strategy for the 3DO. As well as developing original titles for the machine – *Twisted*, *Shock Wave* and *Monster Manor* – they're also using its capabilities to enhance proven products like *John Madden Football*, *FIFA Soccer* and *Wing Commander*. The company seem to be saying to gamers: 'Try this and tell us what you think, but in the meantime here's something we know you're going to like.'

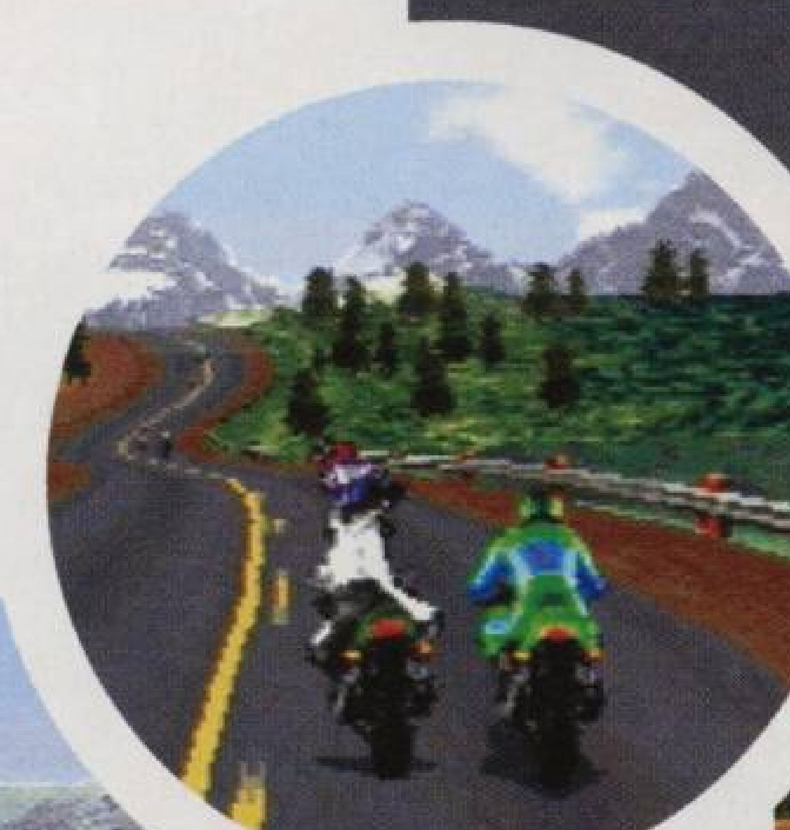
Road Rash falls into the latter category. A motorcycle racing game combining excellent graphics with exhilarating gameplay, it achieved phenomenal success on the Mega Drive a few years ago and remains one of the best games for the system. Given this track record, one would expect the 3DO conversion to be a solid, playable game. What no-one could have predicted, though, is that it would be *this* good.

The 3DO version of *Road Rash* is more than a game; it's a fully fledged cinematic production. The experience begins with a CinePak bike chase sequence, accompanied by the pulsating chords of the *Road Rash*



The Pacific Highway (above) is one of the most sinuous roads you'll ever encounter. Danger could lurk around any corner, and usually does. Travelling on the wrong (ie left) side of the road when travelling at high speed through narrow, dimly lit tunnels (inset) is not advisable







A policeman attempts to dislodge a speeding biker in the Napa Valley (above). The Peninsula level is full of hills, as well as rival bikers (inset)





The City (top) is home to rushing cars and ambling pedestrians. The roads of the Sierra Nevada (middle) are treacherously twisty. The Pacific Highway (above) is characterised by narrow roads and lots of tunnels

theme song, Soundgarden's 'Rusty Cage'. (The front end also includes a couple of superb MTV-style grunge rock videos.) Slick it may be, but EA haven't made the classic mistake of lavishing more attention on the intro than on the action. It is, after all, only an intro, and is there simply to serve as a enticing prelude to the real event: the game itself.

Road Rash contains five separate tracks, each one different in terms of scenery, traffic volume, etc. There are also five selectable player levels which dictate the toughness of the opposition and the length of the tracks – the easiest track stretches only five miles, while the hardest is up to 17 miles long.

The game also incorporates two playing modes. 'Thrash' offers an immediate pick-up-and-play scenario that lets you select any combination of track and player level. But it's the 'Big Game Mode' that constitutes the game's main course. First you assume the character of one of the game's eight resident riders. Then you select one of the five courses to race on – these range from the dizzy heights of the Peninsula to the hustle and bustle of the City. And then you hit the tarmac. The object is simply to finish among the first three contestants in any race, which allows you to move on to the next, more difficult, course.

One of the things that distinguishes *Road Rash* from other, more sedate, racing games (apart from the fact that you're a pair of wheels short) is the attitude of your rivals. The other riders in the race conform to every biker stereotype in the book: they're all chain-wielding maniacs who would sooner split your face than suffer the indignity of having you pass them, and who are prepared to do whatever it takes to stop you reaching the finish line first, even if it means cracking you over the head with a metal pole or kicking your bike out from underneath you. Thankfully, you can give as good as you get: there's nothing more satisfying than exchanging heavy metal with a rival biker while dodging traffic in an urban landscape and then kicking him straight

Five levels

The five courses on offer are: The Peninsula, Pacific Highway, Sierra Nevada, Napa Valley and the City. As you progress through the levels, the courses get longer and the landscapes more impressive.

The City is full of joggers, irate motorists and law-enforcement officers. The Peninsula and Sierra Nevada don't offer much in the way of obstacles, but the roads themselves are challenging enough not to need them. The Napa Valley has the widest roads (sometimes stretching to five lanes), while the Pacific Highway contains the most spectacular scenery.

Continued next page

Music

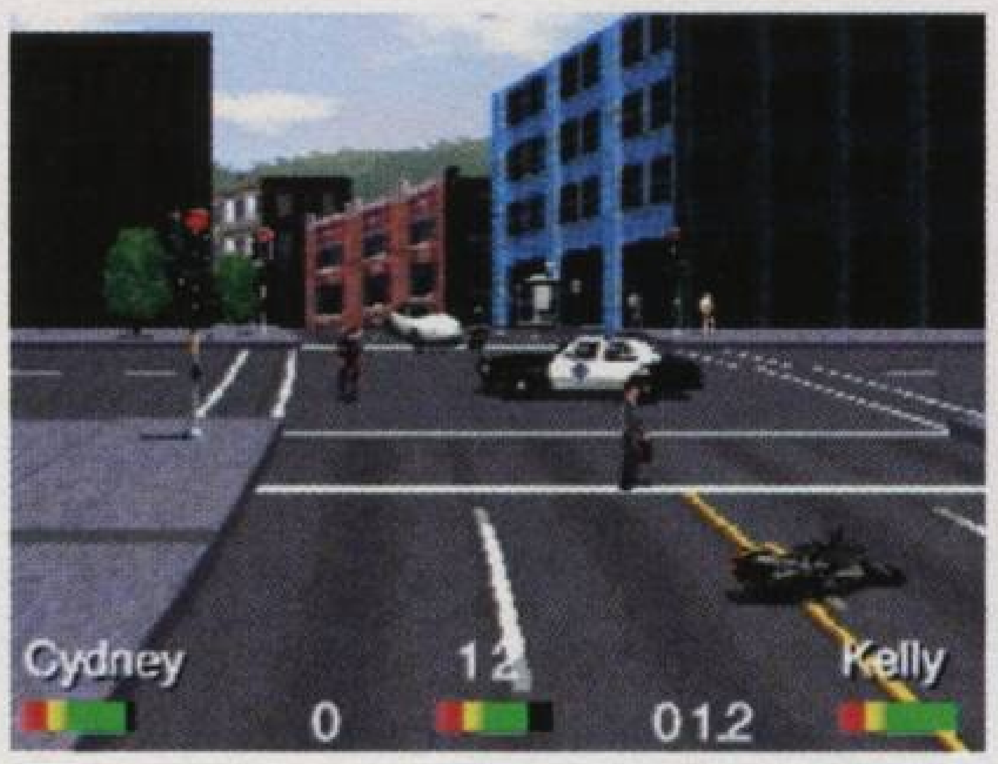








As well as bike footage (which took 40 people two months to shoot) *Road Rash* offers music from A&M artists such as Paw, Therapy?, Soundgarden, Hammerbox and Swervedriver (the latter band represented by 'Duel' and 'The Last Train To Satansville'). Excellent stuff





Problems





If you evade the police bikes, they set up a road block (top). With that cliff edge so close, keeping your bike on the road is desirable (top right). Getting pulled over by the fuzz means game over (above)



Win a race by any means necessary, even if it means taking out the local populace

Continued

into the path of a speeding Porsche or sending him sprawling into the side of a building. (Although this is not to be recommended in real life, of course, as the ludicrously stuffy in-game caution advises.)

Such excitement is only possible because of the exemplary way in which *Road Rash* plays. Your bike is responsive and controllable and gives you the confidence to take risks. You soon find yourself pulling stunts like weaving between passing cars and playing chicken with oncoming vehicles, swerving aside at the last minute to avoid joining the flies on someone's radiator grille.

Thankfully, your bike no longer exhibits a tendency to crash after hitting even the most minor obstacle – a problem that severely affected the pre-pro version **Edge** saw a few months ago (issue 8). Now, instead of tipping you head-first onto the tarmac every time you brush against a tree or a car, your machine just keeps going, subject only to a slight loss of speed. Of course, if you hit a huge truck head-on at 120mph the game isn't so forgiving, but luckily, you can buy a new bike from the money you get for finishing a race.

Road Rash's graphical beauty is self-evident. In fact, the detail packed into the gloriously textured backgrounds is so appealing that they tend to distract you when you're playing the game – you often find yourself admiring the scenery when you should be keeping your eyes on the road ahead. What can't be conveyed by these static screenshots is the smooth 3D update (around 20fps) and the sheer thrill of pelting along undulating, winding roads at ridiculously high speeds.

And, not content with making the backgrounds look stupendous, Electronic Arts

have contrived to make them truly interactive. If you find yourself on the wrong side of a road barrier, for example, you can't just ride through it; you have to wait until a gap appears. Similarly, if you fancy a break from the blacktop you're allowed to venture a fair way into the roadside scenery – although that doesn't stop the police from finding you if you've transgressed. There's also a significant degree of artificial intelligence incorporated in the game: pedestrians hurry to avoid your speeding bike (usually in vain), cars stop at red lights, and the other bikers try to beat each other up.

Road Rash's only potential flaw is its game structure. Giving the player access to all the levels from the outset in the Thrash mode detracts slightly from the 'proper' game – hacking through the levels *knowing* what lies in store is never quite as exciting as taking each level as it comes. Fortunately, though, the exhilarating action more than compensates for the lack of scenic surprises.

Electronic Arts have managed to blend the unadulterated exhilaration of a coin-op like Sega's classic *Super Hang On* with deeper and more rewarding gameplay, and it's this combination that makes 3DO *Road Rash* so enjoyable. With the exception of *John Madden Football*, *Road Rash* is arguably the best 3DO game currently available. It looks fabulous, it sounds fantastic (the music tracks are genuinely good enough to listen to on their own merit) and it's heart-stoppingly playable. *Road Rash* gives 3DO owners a reason to feel proud.

Edge rating: **Nine** out of **ten**

Bike shop



In Big Game Mode, it's essential to choose the best machine for each level (above and right). You do this courtesy of a slick pre-rendered fly-by







***Road Rash* contains 30 minutes' worth of FMV: the local bobby (middle); having a smoke (above)**



The backgrounds in *Road Rash* are more than just pretty. This barrier (above) is actually part of the game; rather than just going 'through' it, which you'd be able to do in many racing games, you have to wait for a break. Sometimes the road splits in two (insert), with one route offering a short cut

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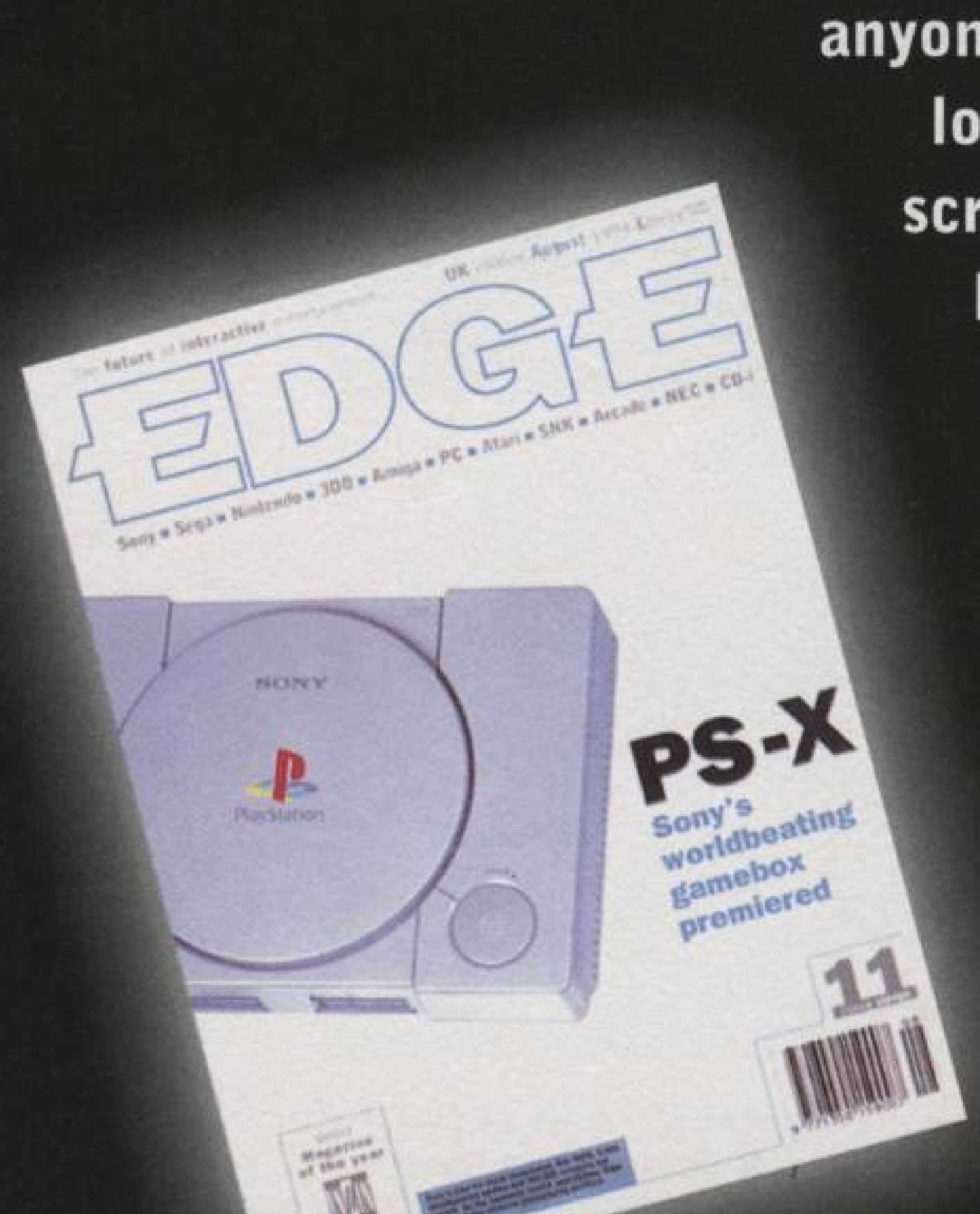
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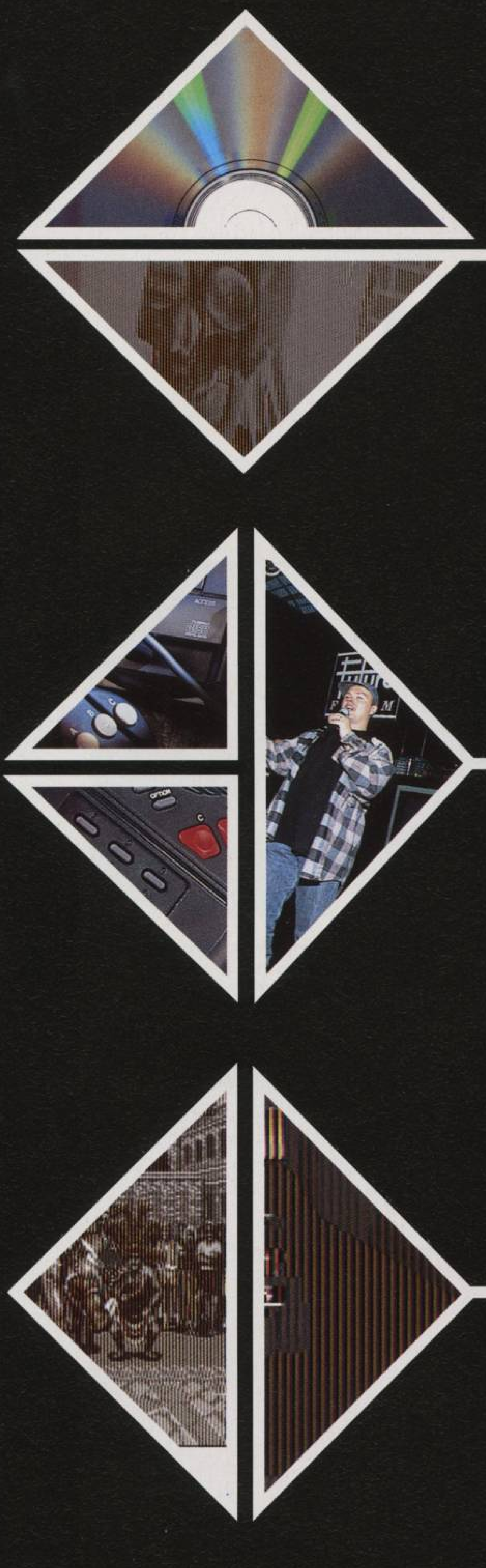
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Earthworm Jim

Format:	SNES/ Mega Drive
Publisher:	Playmates
Developer:	Shiny
Price:	TBA
Size:	16 Mbits
Release:	October 12

After being lavished with kudos prior to its release, Shiny's first creation finally enters the congested 16bit arena. Boasting spectacular visuals and a myriad of playful innovations, *Earthworm Jim* clearly has the capacity to impress. But is there any room for another platform prima donna?

The product of Virgin coder Dave Perry and his band of Virgin defectors, collectively known as Shiny Entertainment, *Earthworm Jim* appears to contain all the ingredients for a superb videogame. Like Virgin's *Aladdin*, the most obvious focus for admiration is the spectacular animation: the movement of Jim and the other characters in the game is sprightly and inventive, and there are lots of genuinely funny sequences that act as a real pull in the early stages.

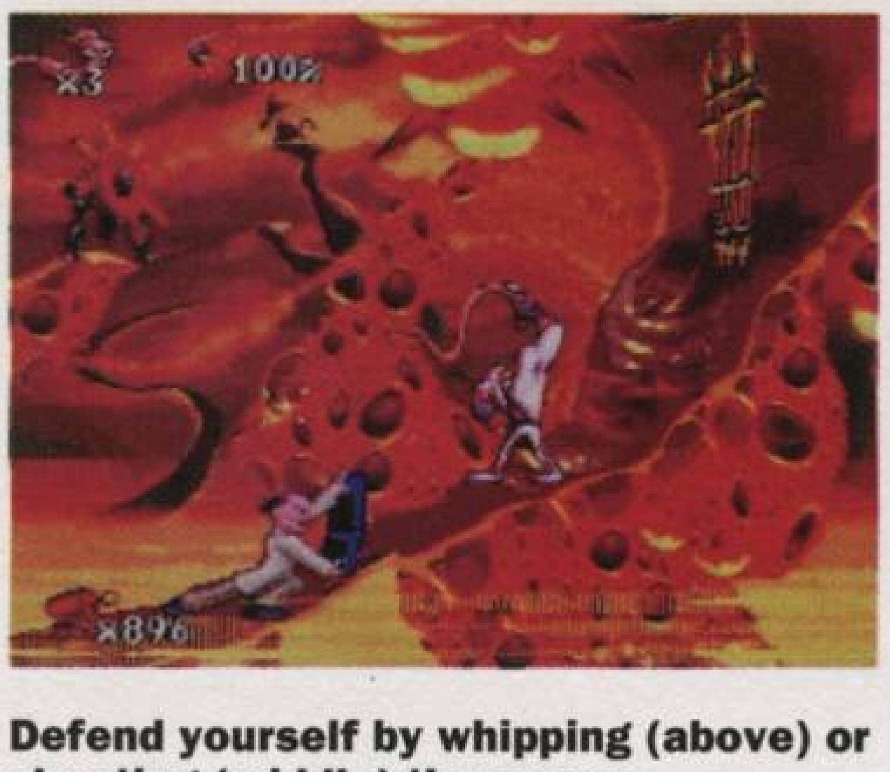
However, once the initial appeal of the graphics has dissolved, it quickly becomes clear that EJ himself isn't quite the character he claims to be. Despite Shiny's attempts to enhance Jim's personality by combining his worm persona with a mechanical suit which he stumbles upon and jumps inside, there's still something missing. Basically, he lacks the



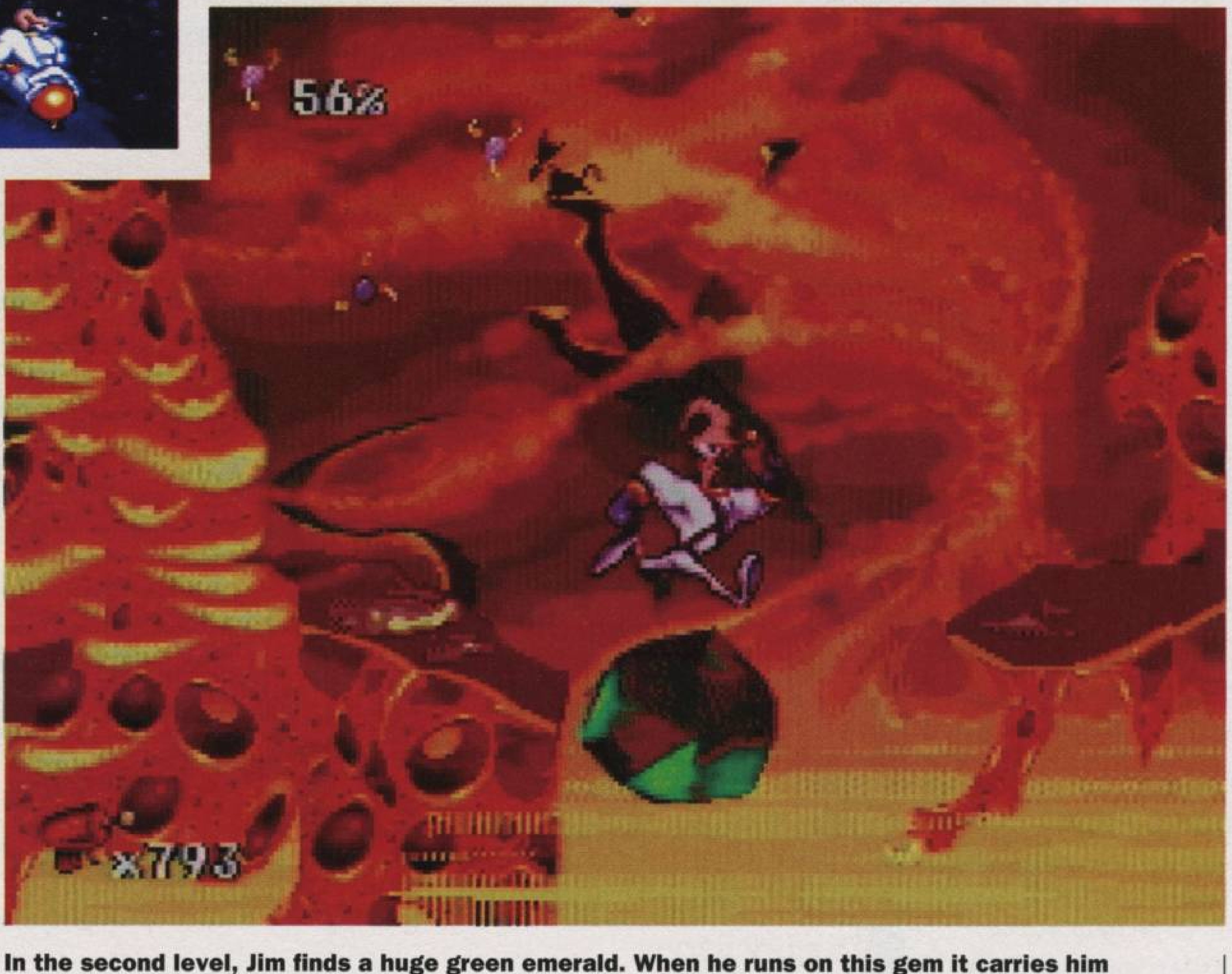
A fridge hangs by a thin wire. Whip the wire and the fridge plummets onto the branch, catapulting that poor bovine into the air







Defend yourself by whipping (above) or shooting (middle) the enemy



In the second level, Jim finds a huge green emerald. When he runs on this gem it carries him upwards, taking him to previously inaccessible platforms. The space-race bonus level (top left)







Jim fights for his life as aliens attack this cage. Escape is impossible; your aim is to simply survive

design sensibilities of popular Japanese gaming icons like Sonic and PC Kid – frankly, he really isn't that likeable. But his tough, defiantly unsavoury appearance does give him at least a modicum of credibility which the Americans will probably go for, even if the rest of us aren't entirely convinced.

Still, character flaws and all, it soon becomes obvious that *Earthworm Jim* is a fine, playable game. Borrowing elements from other platformers – such as multi-directional gunfire and rope swinging (with the worm as the rope, needless to say) – Shiny have made Jim an extremely versatile chap. Control is expertly handled, and it's easy to master Jim's abilities. But there's also a fair amount of frustration. Enemies cling rather too tenaciously to Jim's body, the bosses are unforgiving, and there are far too many leaps of faith required. These aspects probably make the game too tough, especially given the young appeal of the game's cartoon star.

This horrendous-looking creature (inset) was in fact a cute puppy a few seconds ago. The snowman boss (above) shoots fire from his mouth



This fiery effect, complete with three layers of parallax, is a good example of *EJ*'s graphical finery

If you can handle the trickier facets of Shiny's gameplay, *Earthworm Jim* delivers some genuinely entertaining moments. High points include a ride on top of a huge hamster and a chance to launch a cow skywards from a seesaw, for no apparent reason other than that it's funny. At moments like this, the game fairly hops along, bursting with inventiveness. But it's the gaps that lie between them that hardened platform-game veterans may find rather dull and overfamiliar.

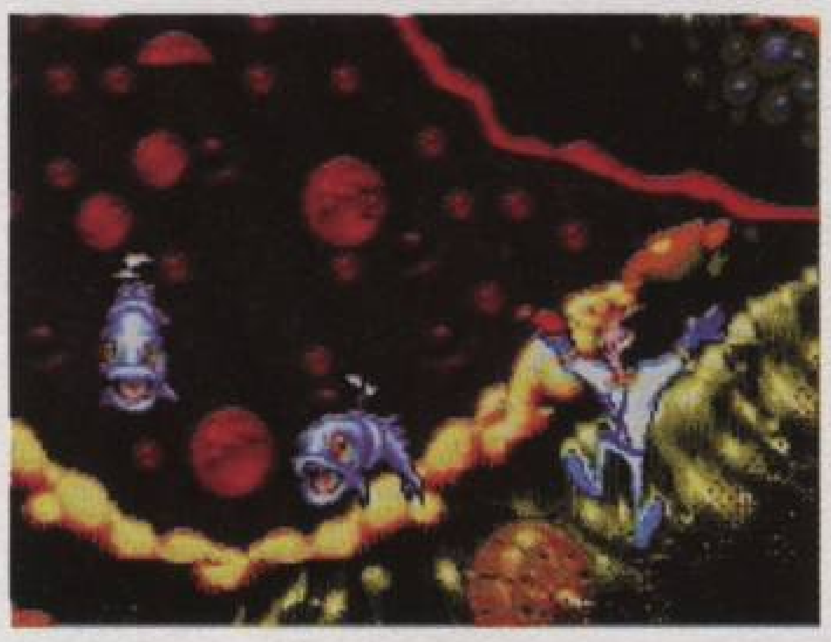
Technically, both the Mega Drive and SNES versions cope admirably with the paces Shiny have put them through, although *Earthworm*



It's not always obvious what you have to do next in *Earthworm Jim*. Here, Jim has to make this hamster eat a path to the next section

Continued next page







Help Peter Puppy through this hazard-filled level (top). The revolting 'intestine' level (middle). Jim takes on a level boss (bottom)



On the SNES version, the background of this underwater section (above) shimmers nicely, but objects remain static. The Mega Drive equivalent is more convincing: everything sways authentically

Continued

Jim is essentially a Mega Drive game that's been optimised to work on the SNES, and Dave Perry's skilful coding means that in places the Sega machine manages to outclass the SNES. Surprisingly, the notoriously poor sound chip in Sega's 16bitter emits some remarkably clear samples, which make up for what can only be described as unmemorable background music.

But it's the structure of *EJ* that lets it down. There are no passwords or save game options, so the player is required to romp through in a single attempt. With so many levels, sub-levels, and some rather tedious 3D asteroid bonus rounds, it's questionable whether anyone would have the enthusiasm to bother. The frustration factor plays a large part in this lack of faith, but it's also worth remembering that the school of platformers to which *EJ* belongs is thoroughly oversubscribed – cartoon characters coupled with garish backdrops are fast becoming old hat. Jim's success hangs on there being an audience that isn't already fatigued by stuff like this.

It's strange how an apparently 'surefire' hit like Earthworm Jim has ended up as just another good platformer rather than an outstanding one. Although a lot of attention has been applied to the play mechanics, there's little of real originality here. More significantly, it's not that much fun. Earthie might win fans with his particular brand of humour, but he's no platform prodigy.

Edge rating: **Seven** out of **ten**

Matching pair





Earthworm Jim looks much bulkier in the SNES version (right) than in the Mega Drive game (left). Nintendo's machine also boasts more parallax (including some superb sun glare) and extra colours

Bosses



Bosses are a crucial component of any platformer. The selection in *EJ* includes (from top left): a bungee-jumping blob; a weapon-wielding chicken; a mucus-oozing slimeball; the Evil Cat (with nine lives, of course); and Professor Monkey For A Head

Alone in the Dark

Format:	3DO
Publisher:	Interplay
Developer:	Krysalis (Original PC version: Adeline)
Price:	£55 (import)
Size:	1 CD
Release:	Out now (US)
Supplied by:	Raven Games 081-663 6810

After sampling the enjoyable but derivative *Doctor Hauzer* from Japanese software house Riverhill Soft, 3DO owners have been eagerly awaiting a conversion of the game that inspired it, Adeline Software's *Alone In The Dark*. Now the seminal polygon adventure which created such an impact when it first appeared on the PC has finally arrived on the 32bit system.

Superficially, both *Doctor Hauzer* and 3DO *Alone In The Dark* are remarkably similar, but there are a number of significant differences between the two. In terms of graphics it has to be said that *Doctor Hauzer* is far more ambitious than *Alone In The Dark*; its textured polygon rooms and variety of viewpoints make it a visually more exciting product. For the most part, 3DO *Alone In The Dark* looks identical to the PC version – and includes some unnecessarily large borders around the screen. But despite this, *Alone In The Dark* still manages to impress in the most important area: gameplay.

Although both games are based on puzzle solving, the brain-teasers on offer differ greatly in style. The puzzles in Riverhill's game involve performing essentially simple actions, such as putting flowers in a vase; the trick lies in working out that the flowers *need* to be put in the vase in the first place. In *Alone In The Dark* it's more obvious what you have to do, but the puzzles themselves are far more rewarding to solve.

But what really makes *Alone In The Dark* stand out is its inclusion of combat. Contrary to many people's assumptions, *Virtua Fighter* didn't pioneer realistic polygon-based fighting action; *Alone In The Dark* contains some horrifyingly authentic combat scenes, which add immeasurably to the game's atmosphere. Your character only has basic punch and kick moves, but the manner in which he executes them – and the way the monsters reel backwards after being hit – is disturbingly lifelike. The hand-to-hand conflict can get repetitive after a while, but, thanks to the



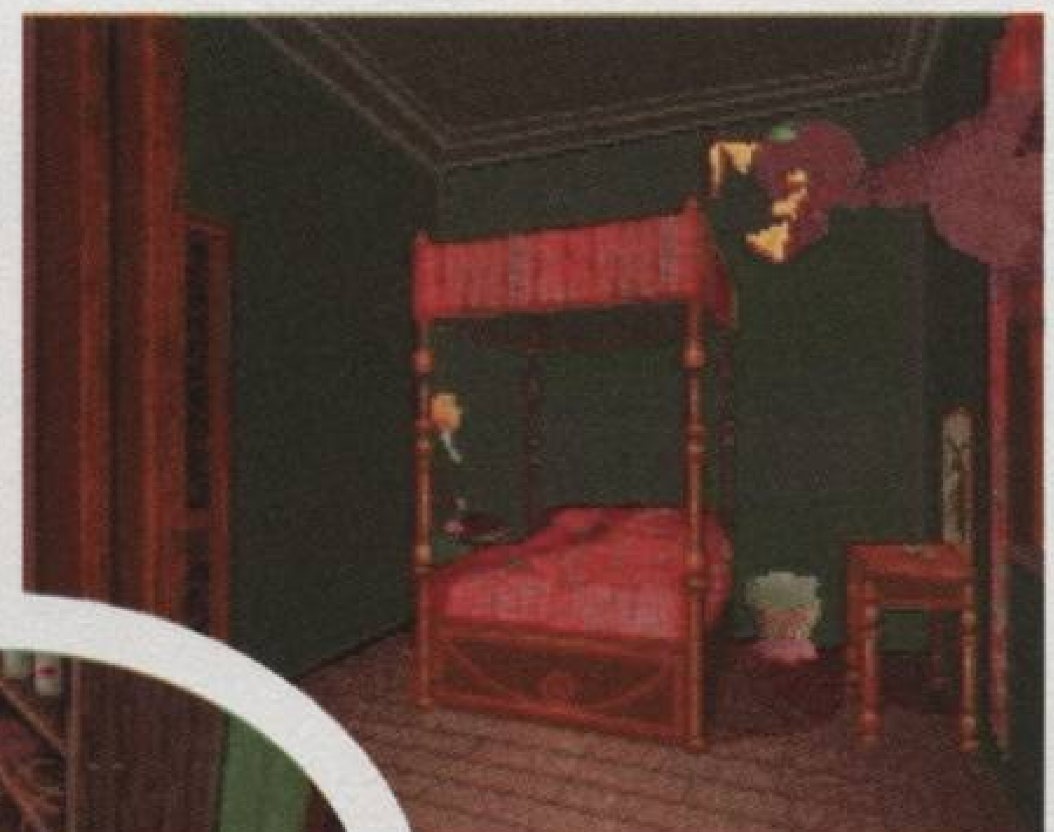
You can't get past this winged demon until you've performed a certain task involving mirrors



***Alone In The Dark* was the first adventure game to incorporate different 'camera' angles. Interesting viewpoints like this (above) give the game its distinctive cinematic feel**

Enemies









The hero fights off a zombie attack (top). A monstrous bird bursts through the window (top right). A zombie menaces this damsel (above). The bow and arrow (insert) is a useful weapon



When you enter this bathroom, a huge flesh-eating plant lunges at you, snapping with its razor-sharp teeth. Those polygons look a little crude by today's standards

relatively naturalistic animation (the main character in *Doctor Hauzer* flops around like a soggy cardboard cut-out in comparison) and the wide variety of enemies, it gives the game a great deal more punch.

Thankfully, you don't just have to rely on your fists to fight your way through the house; there's also an assortment of weapons lying scattered around with which you can defend yourself. Some of these are extremely satisfying to use – especially the double-barrelled shotgun – and make a significant contribution to your enjoyment of the game.


The house at the centre of the *Alone In The Dark* mystery contains roughly the same number of rooms as the mansion in *Dr Hauzer*, which means that, like Riverhill's title, the game is too small. Although your journey does last slightly longer, you'll still find yourself meeting the end of the adventure rather too abruptly. Movement around the mansion is also hampered by the fiddly controls – the PC version plays brilliantly with the cursor keys (although it's ironic that owners of £1,000 machines have to use the bloody cursor keys) while the 3DO joypad makes playing *Alone In The Dark* a frequently irksome experience

Another problem is that animation that was perfectly smooth on a 486/33 PC seems to chug slightly on the 3DO. And that slow CD access problem rears its head again. One scene takes almost five seconds to load, which may sound insignificant, but it makes the game noticeably more ponderous than the free-flowing PC version.

Of course, despite these flaws 3DO *Alone In The Dark* is a great game – even a group of particularly stupid monkeys would have had a job mucking up this conversion. It looks good, the gameplay is engrossing, and the soundtrack is atmospheric. And it's worth noting that this two-year-old title is more playable than much modern 3DO software.

However, although revolutionary in its time, *AITD* is hardly the kind of game you can use today to show off what your machine can do. There are far more suitable candidates to fill the role of ambassador for 3DO performance – the sequel will probably be one of them when it is completed next year.

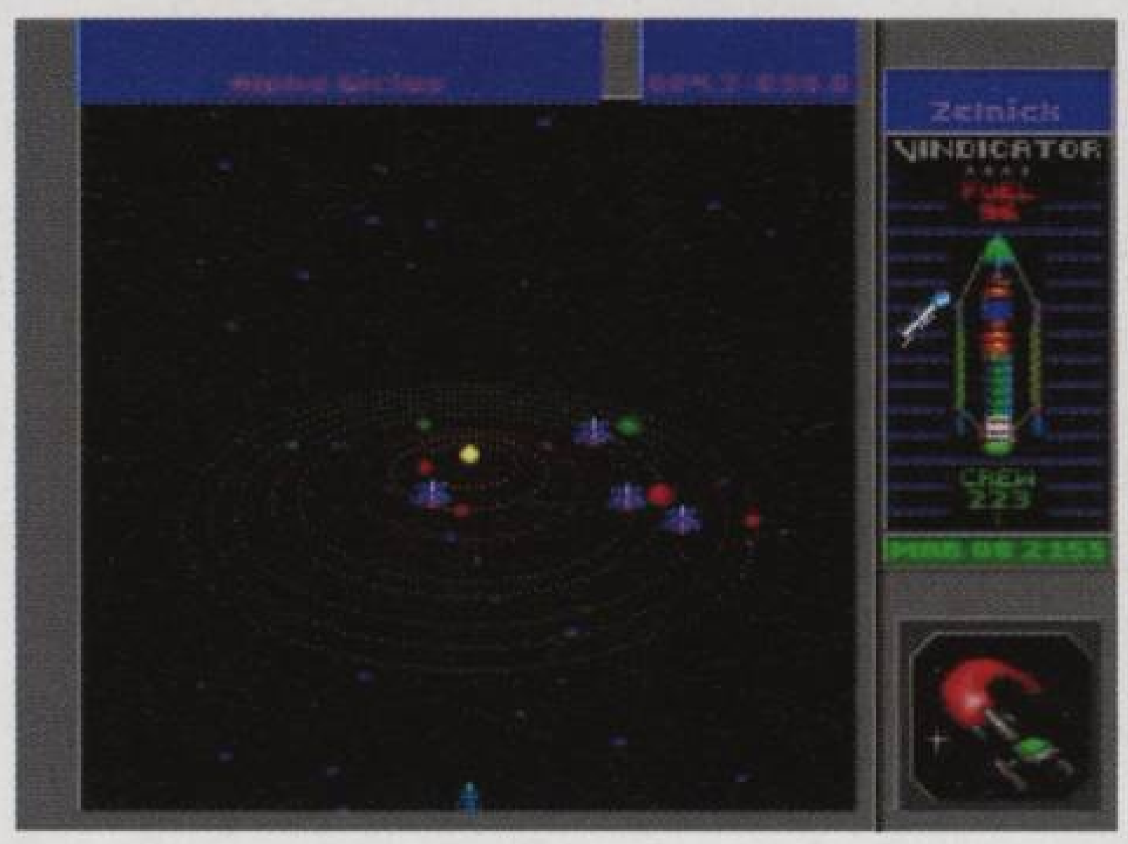
Edge rating: **Seven** out of **ten**


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Star Control II

Format:	3DO
Publisher:	Crystal Dynamics
Developer:	In-house
Price:	£50
Size:	1 CD
Release:	Out now





When you enter a system, a map of its planets is displayed (left). Many of the alien species you meet prefer fighting to negotiating, and they rarely start a battle without insulting you first (right)





Every so often you come across a game that, although primitive, is so intriguing that you find yourself playing it for hours on end, ignoring activities like eating and sleeping which suddenly assume a secondary importance. *Star Control II* is such a game. It's not brilliant, but it is addictive, as anyone who has played it will testify.

The attraction of *Star Control II* is not immediately apparent, though. A conversion of a mature PC game, it features garish and unsophisticated sprite-based graphics that invite comparisons with 8bit games. However, in terms of cosmetics, the decidedly dated visuals are compensated for by the game's wide range of bizarre sounds, toe-tapping tunes, and idiosyncratic characters.

But the appeal of *Star Control II* can be attributed mainly to its distinctive blend of space strategy, trading, negotiating, fighting and exploring. After a protracted war, the Earth has been enslaved by aliens and you have to liberate it, searching the galaxy for friendly alien species and scouring planets for minerals, life forms and energy sources to augment your Earth-based supplies. When your stocks are sufficient and you've attracted enough allies, you can go to war with the Earth's oppressors. The concept isn't exactly original, but *Star Control II* offers the perfect balance between freedom to explore and a linear, objective-based scenario.

Star Control II is a methodical type of game that takes a long time to complete and never provides much in the way of adrenaline-surging excitement. Frankly, anyone who prefers action games will probably find it tedious. But there's so much variety here that it's hard to resist the temptation to continue playing, just in case you discover something new.

The problem with *Star Control II* is that it's not really a 3DO title. The gameplay may be absorbing, but it quite obviously fails to take advantage of the 3DO's potent hardware. Crystal Dynamics have always been an important catalyst for 3DO, but *Star Control II* is little more than a makeweight for the company's summer release schedule.



This starbase (above) is your operational HQ. After periods of exploration and scavenging you return here to offload booty, restock and plan your war efforts. Before the battle starts, you select your ship (top). The actual battles (middle) are brief

Edge rating: **Six** out of **ten**




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Mortal Kombat II





The mighty Jax finds himself on the receiving end of Scorpion's harpoon (left). Scorpion gets a taste of Rayden's electrifying power (above)

Format:	SNES/MD
Publisher:	Acclaim
Developer:	Sculptured Software/ Probe
Price:	£50
Size:	24 Mbits
Release:	Sept 13 (UK)

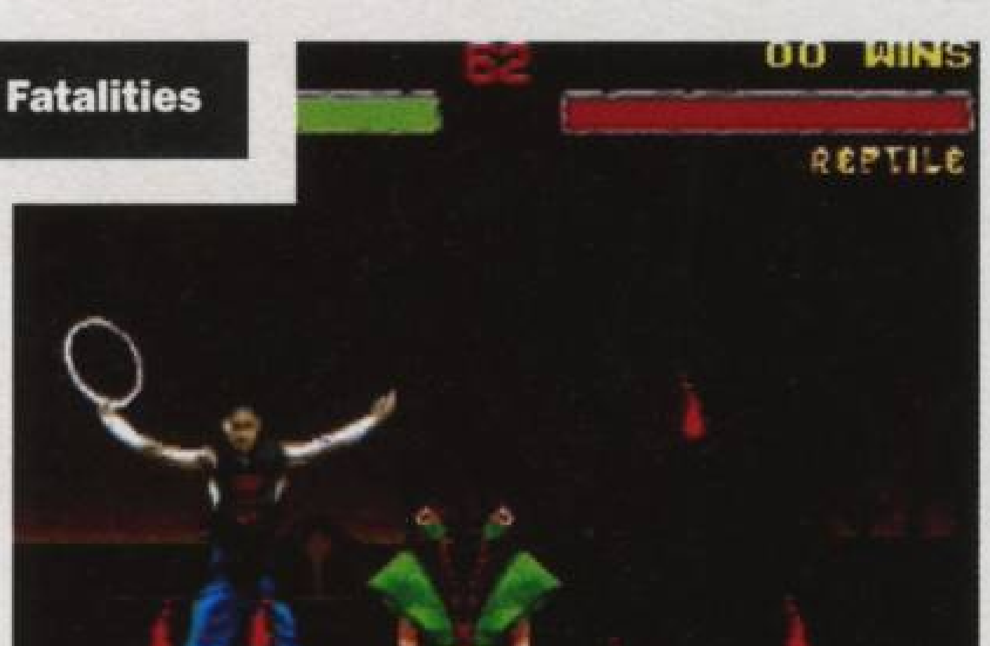
Arcade beat 'em up enthusiasts have known for some time that *Mortal Kombat II* is a genuine alternative to *Street Fighter II*. But until now console fighting fans have only had one real choice – the first *Mortal Kombat* game never offered Capcom's champion much of a contest.

Now that's all about to change. Just as the sequel to *Street Fighter* virtually redefined the genre, so *Mortal Kombat II* rips open the original game and performs some emergency surgery. The game may *look* similar to its predecessor but that's where the resemblance ends. The sequel is bigger, faster and far more playable.

This may not be apparent from the outset, though. *Mortal Kombat II* is very tricky to begin with – almost to the point where you consider giving up in frustration. You find yourself stabbing randomly at the four attack buttons, hoping that some of the amazing things you've heard about the game will miraculously start to happen. They don't. As with any good beat 'em up, you have to put in a lot of effort to get any rewards from *MKII*.

But after a few hours' play those rewards come thick and fast. The initial awkwardness disappears, the bouts last longer and you find yourself actually developing a strategy. You also discover that combination attacks are possible – something the first game sadly

Fatalities



Kung Lau demonstrates his vicious 'Vertical Slice' Fatality on the unfortunate Reptile



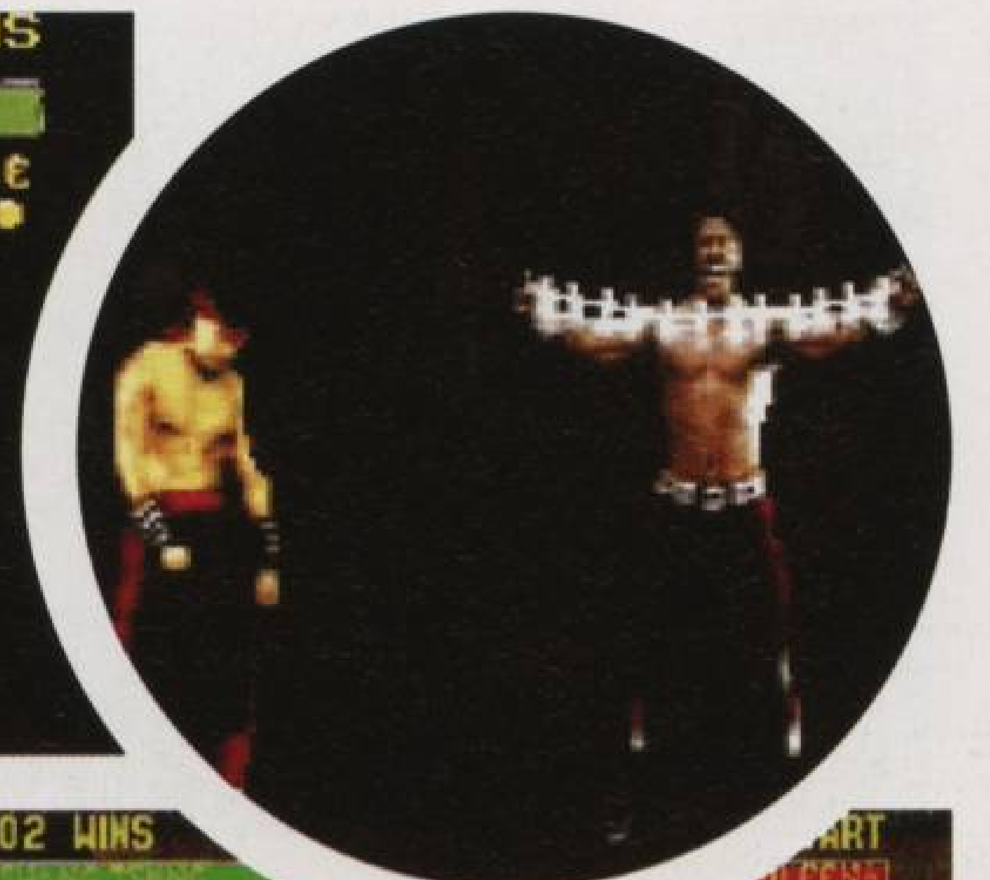
In one of the most brutal Fatalities in the game, Mileena performs a frenzied sai attack

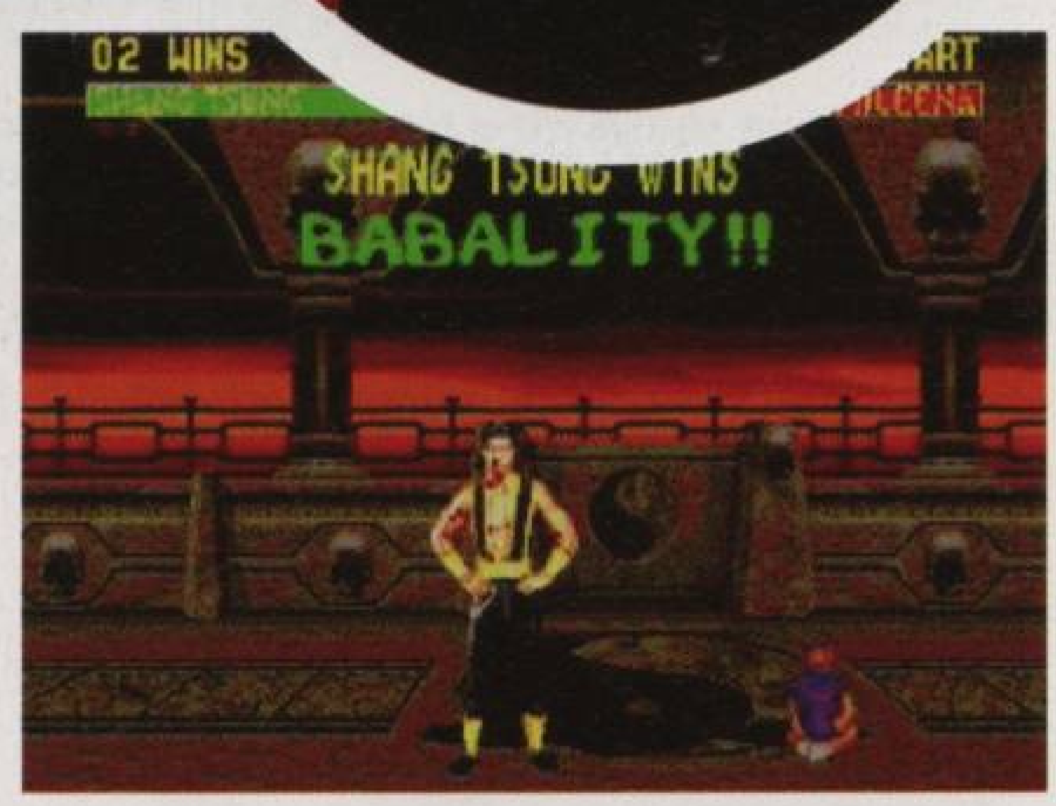


Kitana gives Reptile the Kiss Of Death, after which he will explode into hundreds of pieces



Reptile proves he's a friendly sort of bloke after all by offering Mileena a doll of himself





Shang Tsung turns Mileena into a baby (above) while Jax shows off his origami skills (insert)

Babalities and Friendships

As well as inflicting horrific 'Fatalities' on your opponent, you can now also perform 'Babalities' and 'Friendships'. Babalities involve turning your adversary into a baby at the end of a fight – a satisfying way of demonstrating your superiority.

Friendships are a little less gratifying. Instead of ripping the other fighter's head off or turning them into a nappy-wearing infant, you simply give them a present. Both Babalities and Friendships are difficult to pull off because in order to execute them you can't use any punches in the winning round, only kicks. Oh, and knowing the correct joypad combination also helps.

Continued next page

lacked. In fact, the more you play the more you discover about *Mortal Kombat II*. Like *Street Fighter II*, *Mortal Kombat II*'s learning curve is so long it goes off the chart.

Something that won't take you long to discover is the gore. The arcade version was drenched with blood – almost every move produced gallons of the stuff – and both the SNES and Mega Drive versions are similarly bespattered. The mighty Nintendo have obviously learned their lesson from the outcry over the bloodless first *Mortal Kombat* game on the SNES (the antiseptic nature of the onscreen violence limited what was already just an average beat 'em up) and decided to give their bloodthirsty public what they obviously want. Thankfully, *Mortal Kombat II* doesn't depend on this dubious attraction, though. The blood does help to give the action a harder edge, but there's more to this sequel than graphic brutality.

There are 12 separate characters, for example. Like the combatants in *Street Fighter II*, these all have different abilities, although *Mortal Kombat II*'s digitised fighters lack the personality of their more cartoon-like counterparts in *Street Fighter II*. The sprites in the Mega Drive version are noticeably bigger than those in the SNES game, but the SNES makes up for this with better detail and more vibrant colour. Considering the limitations of the SNES and Mega Drive, *Mortal Kombat II*'s backdrops have been reproduced as faithfully as possible – although they still look markedly inferior to the 16bit-colour visuals in the arcade version. Overall, apart from the loss of a few frames of animation, the console adaptations are commendably true to the coin-op in terms of looks.

One of the aspects that helped give the arcade game its characteristic dark, mystical atmosphere was its lashings of sampled speech and moody music. Predictably, the SNES offers more of the original sound than the Mega Drive, but what little there is on the Sega machine is surprisingly clear. Capcom take note.

It's not often that you see a coin-op conversion which manages to play just like its arcade parent. Normally, nuances that were





Jade throws a fan at Lui Kan (top), while the other secret character, Smoke, evades Sub-Zero's kick



The infamous Kintaro morph in full effect: Shan Tsung turns into The Beast and lets fly



Mileena is helpless as Shang Tsung raises her into the air and proceeds to drain her soul



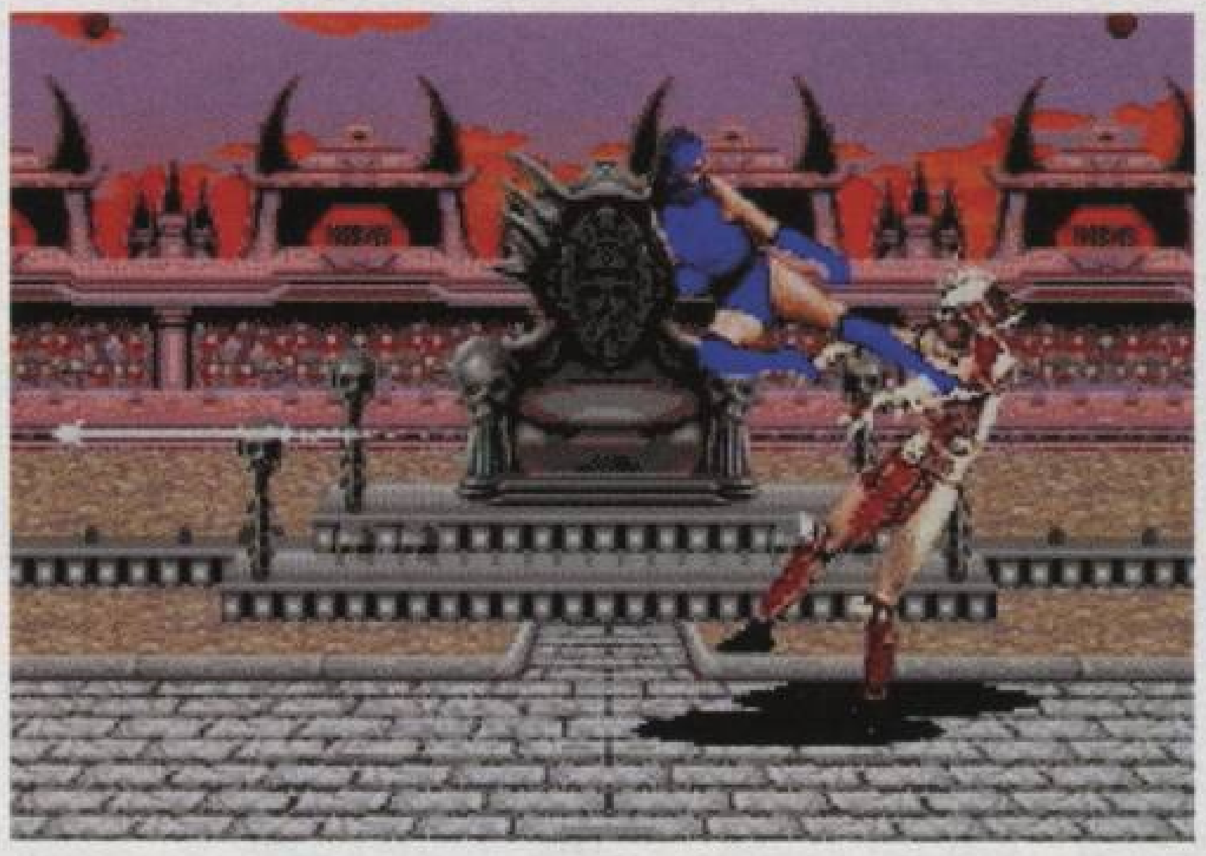
Johnny Cage may look like a nice chap but given half the chance he'll rip you in two

Bosses

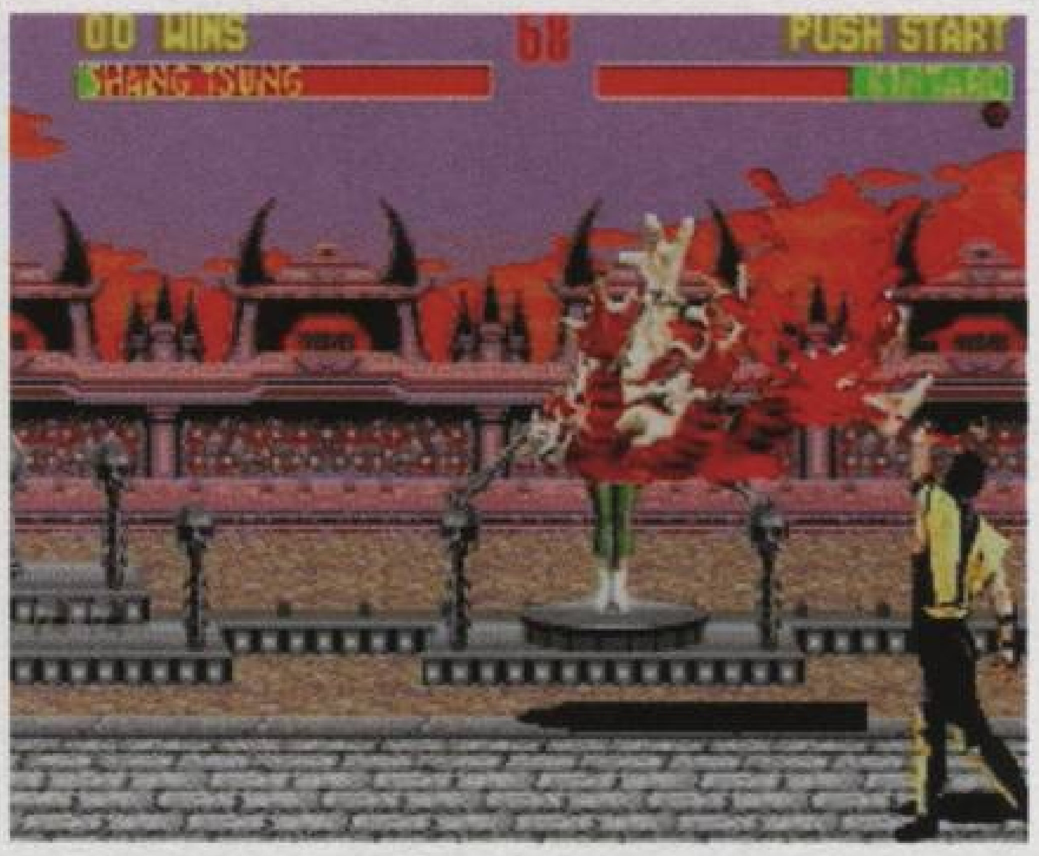
The two final characters in *Mortal Kombat II* are the meanest and nastiest you're ever likely to encounter in a beat 'em up.

Kintaro is the four-armed descendant of Goro from the first *Mortal Kombat* game. He's very difficult to defeat because he constantly jumps all over the place – usually landing on your head.

The final character is Shao Khan. By observing your performance throughout the game he knows exactly what to expect when he fights you. He can move very quickly and throws electric spears without warning. He also tends to shout and boast a lot during bouts.



Shao Khan shows off a lot during fights. This is the best time to attack him. Here, Kitana jumps over an electric spear and kicks him right in the chops





Scorpion sends Kintaro flying (top). Shang Tsung's attack is foiled by The Beast (above)

apparent in the arcade game never make it to the home versions – programmers tend to overlook minor details and just get on with programming the main game. But that's not the case with *Mortal Kombat II*. Both console games play exactly the same as the coin-op; all the tricks that were available in the arcade can be accessed here. So if you could pull off Kitana's deadly three-hit combo – Fan Wave into Flying Punch into Fan Throw – on the coin-op you'll be able to do the same on either the SNES or Mega Drive version.

As well as the 12 main characters, the developers have managed to include the three hidden ones: Jade, Smoke and Noob Saibot are all here. Finding them all will take some time, but the effort is worth it – if only to see the wonderful mist effect that surrounds Smoke as he leaps around the screen.

The brutal but rewarding Fatalities are also here – all 24 of them. That's not necessarily a blessing, though: there's nothing more frustrating than having an opponent at your mercy, seeing the words 'Finish Him', and not being able to do the job because you've forgotten how to perform the death move. And the accompanying limb-severing sound effects are also very weak compared to the coin-op's.

And the Babalities and Friendships, which add a touch of humour to the game, have also been squeezed into these 24-megabit cartridges. What better way to insult your rival than by turning him into a baby at the end of a fight? In fact, there doesn't seem to be a single aspect either Sculptured Software or Probe have left out of their respective games – everything that was in arcade *Mortal Kombat II* also appears on both home formats.

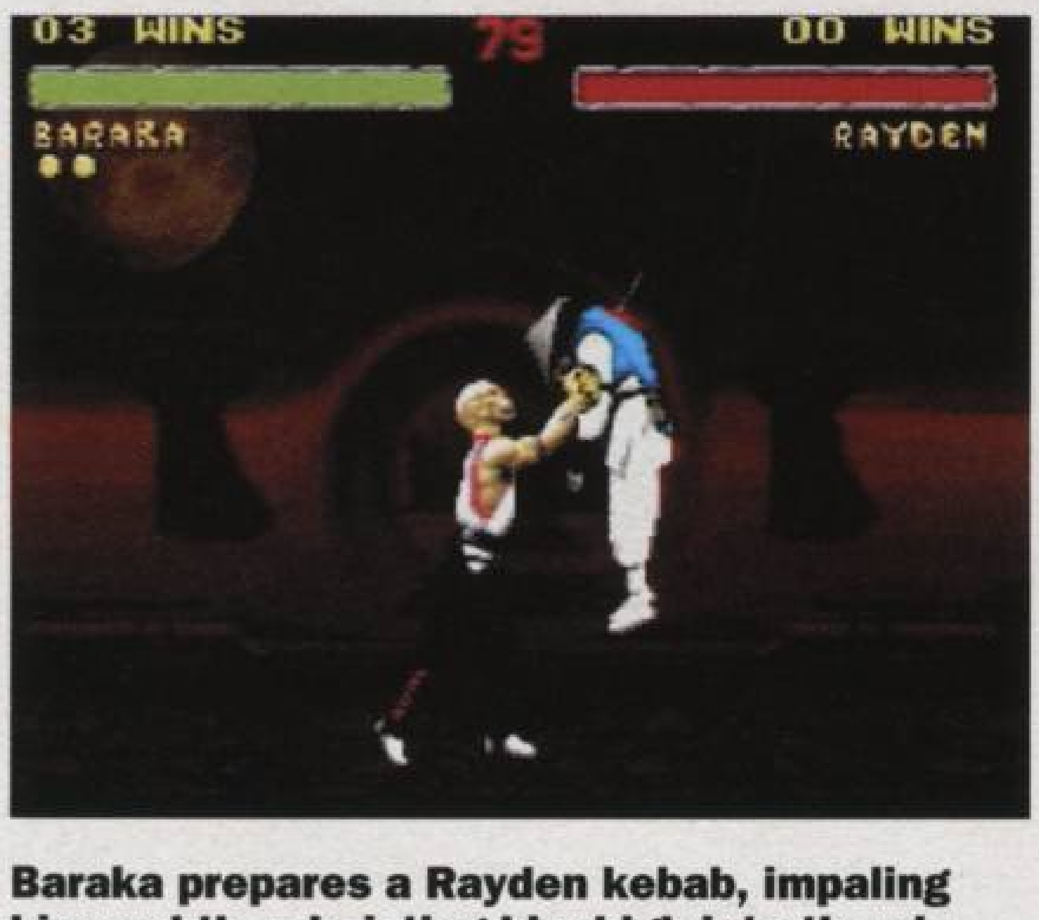
Overall, *Mortal Kombat II* is a playable and varied package – it's without doubt the most rewarding beat 'em up this side of *Street Fighter II*. Whether it will prove to have the staying power of Capcom's legendary game won't be known for some time, but the early signs are encouraging. Beat 'em up devotees will just be hoping that the developers, now they seem to have discovered the right formula, don't go down the same route as Capcom and start milking it dry with an endless series of new models. E

Edge rating: **Eight** out of **ten**

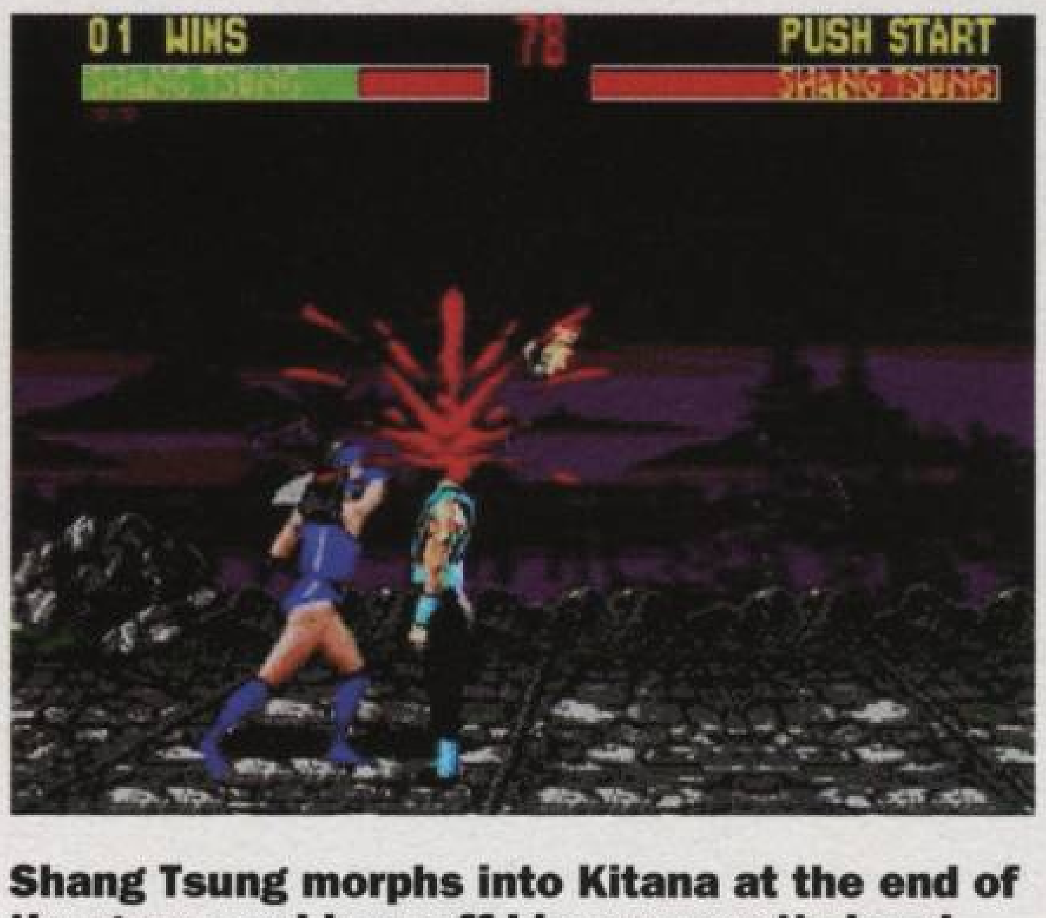




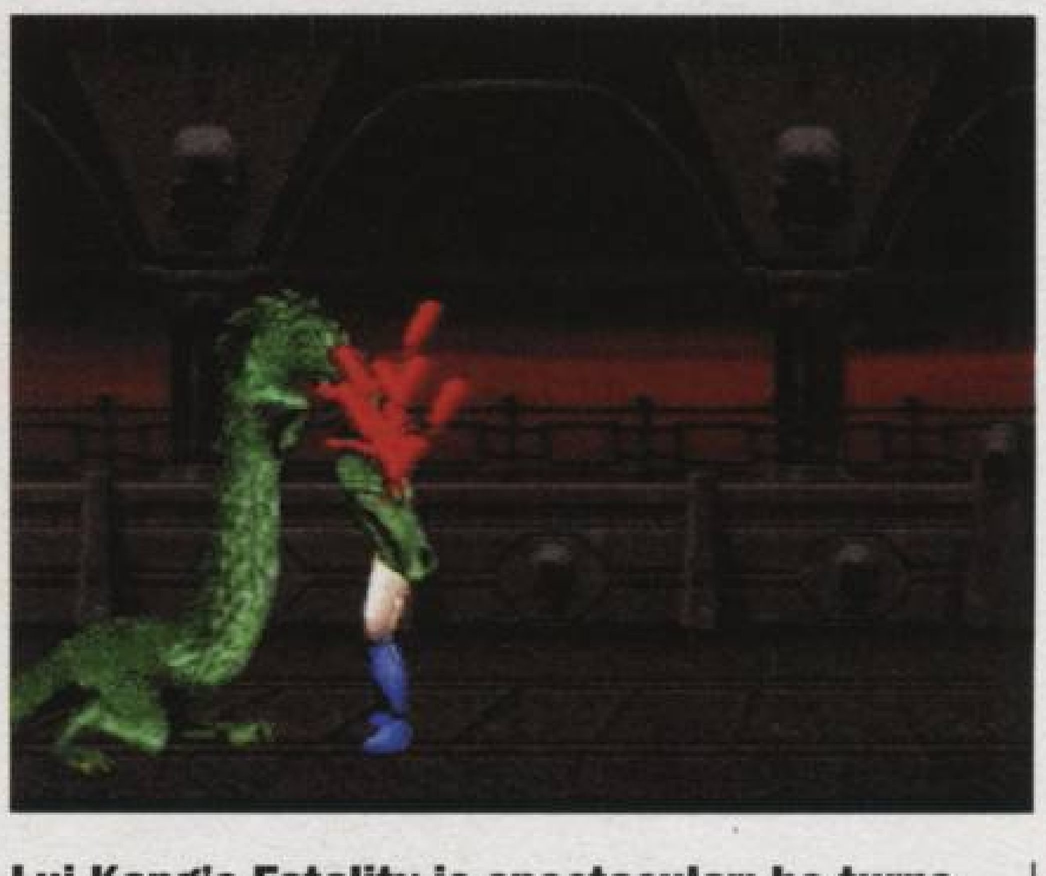
SNES *MKII* (top) has more detail, higher definition and better colour than the Mega Drive game (above)



Baraka prepares a Rayden kebab, impaling him and then hoisting him high into the air



Shang Tsung morphs into Kitana at the end of the game and lops off his opponent's head



Lui Kang's Fatality is spectacular: he turns into a dragon and bites his adversary in half

Burning Soldier





Format:	3DO
Publisher:	Matsushita
Developer:	Pack-In-Video
Price:	£85 (import)
Size:	1 CD
Release:	Out now (Jap)
Supplied by:	Raven Games 081-663 6822

Nice backdrops, shame about the gameplay (above). An alien ship closes in (above right)



About half an hour after seeing the first level (above) you'll have completed the entire game. This asteroid field is reminiscent of the one in *Starblade*, but vastly inferior

If there's one thing the 3DO can do without, it's shoot 'em ups like *Burning Soldier*. 3DO enthusiasts may tell you that it looks great and sounds brilliant, ergo, it's a good game, but the fact is that no game which lacks playability to the extent that *Burning Soldier* does and can be finished in under half an hour is a worthwhile experience.

It starts off well enough, with a nice 3D rendered intro and a foot-tapping techno tune. But when you launch into the game proper you discover that, once again, you can't actually control where you go – you're just the gun-man on this trip. All you're required to do is move a cursor around the screen and blast badly animated alien spacecraft as they appear in front of you.

Ignore the fact that the game features some fairly impressive scenery, streamed off CD – *Silpheed* on the Mega CD can manage that much. *Burning Soldier* is predictable and uneventful – the intergalactic equivalent of a Sunday afternoon drive with your grandparents. Unlike the game it's trying desperately to emulate – Namco's *Starblade* – *Burning Soldier* never makes you feel that you're taking part in an epic space battle with the fate of millions depending on you. After ten minutes you lose the will to continue. Very soon afterwards you reach the end of the game.

Burning Soldier is the most uninspiring 3DO release ever. It's ironic that on the eve of the Panasonic machine's UK launch, just when the format needs games that make people sit up and take notice, along comes one which does just that – but for all the wrong reasons.



One of the end-of-level bosses. After flying through the green rings, shoot the main gun

Edge rating: **Two** out of **ten**



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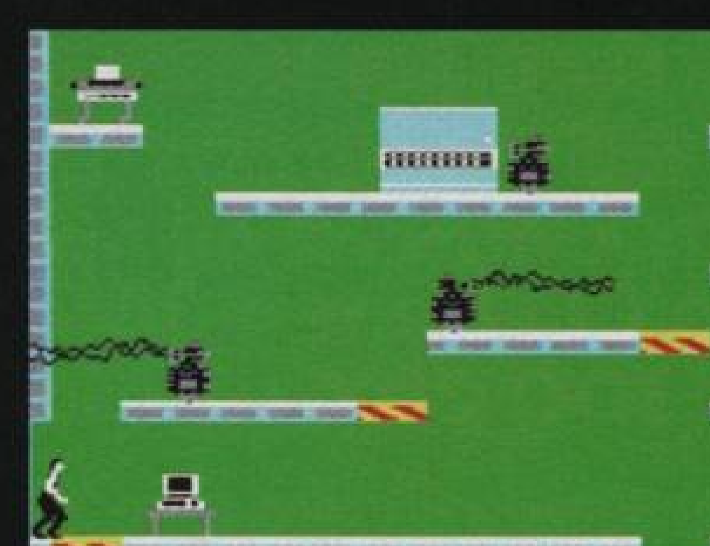
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Edge gets misty-eyed about another pioneering videogame that made up for its lack of sophisticated graphics with an abundance of playability

Impossible Mission



To have any hope of finishing *Impossible Mission* you've got to search every single piece of furniture





Efficient use of the lift saves time (above). The robots follow pre-determined paths (top)

Format:	C64
Publisher:	US Gold
Developer:	Epyx
Price:	£5-£10
Released:	1985

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Platform games were two-a-penny in 1986. But there was one game that stood head and shoulders above the hoi polloi, looking down with derision at the efforts of other programmers. That game was *Impossible Mission*.

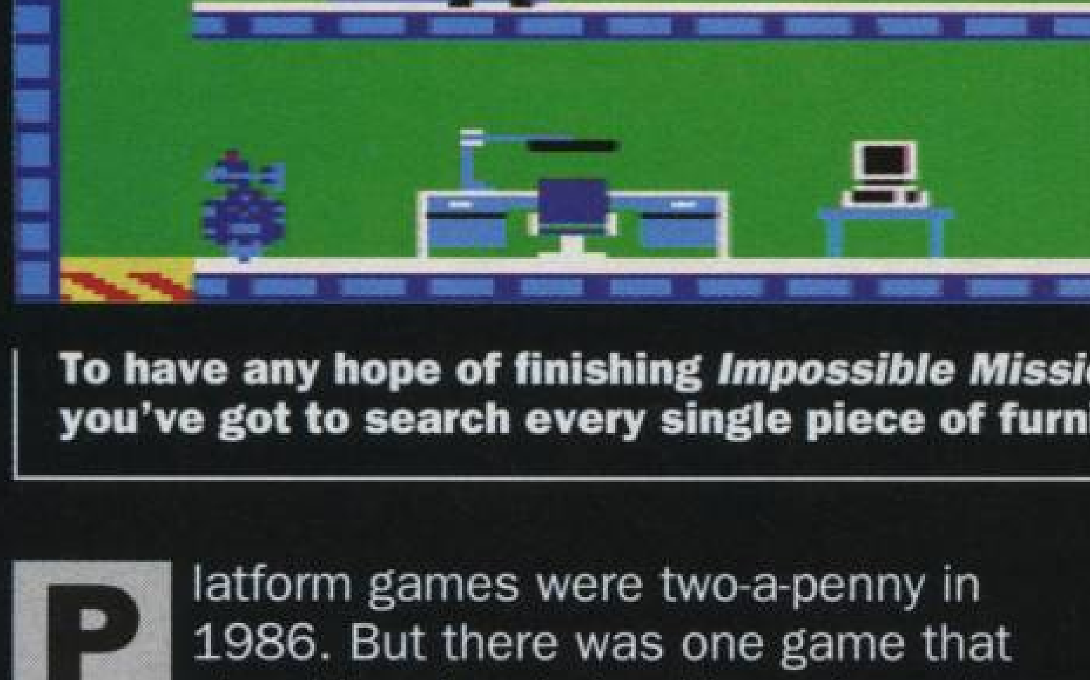
Impossible Mission is remembered for many things: its difficulty, its atmosphere, its frenetic platform action. But there were two features that made *Impossible Mission* – and the C64 – really stand out: the clear digitised speech, and the superbly fluid animation of the main character.

Until the game's release, the quality of software on the Commodore 64 hadn't really shown off the machine's potential. This enabled its main rival, the Sinclair Spectrum 48K – technically a far inferior machine but one which had a catalogue of superb games – to steal a march on it. *Impossible Mission* showed that the C64 was in a different league.

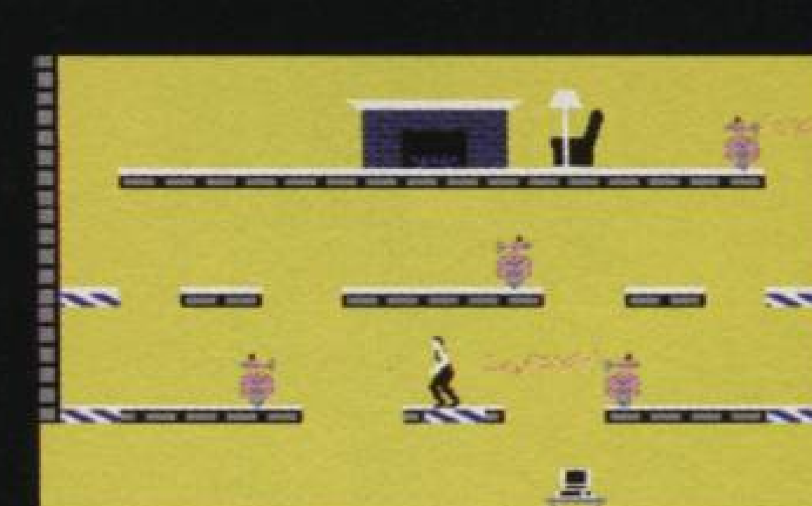
The game begins with your arrival at the laboratory of a mad professor. You're given a set time to explore its hundreds of rooms in an effort to unearth the pieces of a picture that will foil the professor's evil plans. All the pieces of the picture are secreted in items of furniture, each of which takes a while to search. Meanwhile, the robots that patrol the laboratory are closing in. These robots are programmed to vaporise you on sight; if they come too close, it's all over.

Impossible Mission remains one of the hardest games ever – 'impossible' is not a complete exaggeration. But, like many other classics, you're not put off by the fact that you rarely even approach the end. Instead, the atmospheric sound, smooth graphics and huge playing area make the game a joy. And the rigours of the journey make reaching your destination all the more satisfying.

'Stay a while. Stay forever,' intones the professor at the start of the game. *Impossible Mission* will indeed stay in the hearts and minds of platform lovers. Sadly, the same can't be said for *Impossible Mission 2025*, its recent console sequel.



You can use passwords to deactivate the robots, making your search much safer





Even moving around relatively simple rooms like these (above) eats up large chunks of the 60 minutes of playing time you're allotted to complete the game

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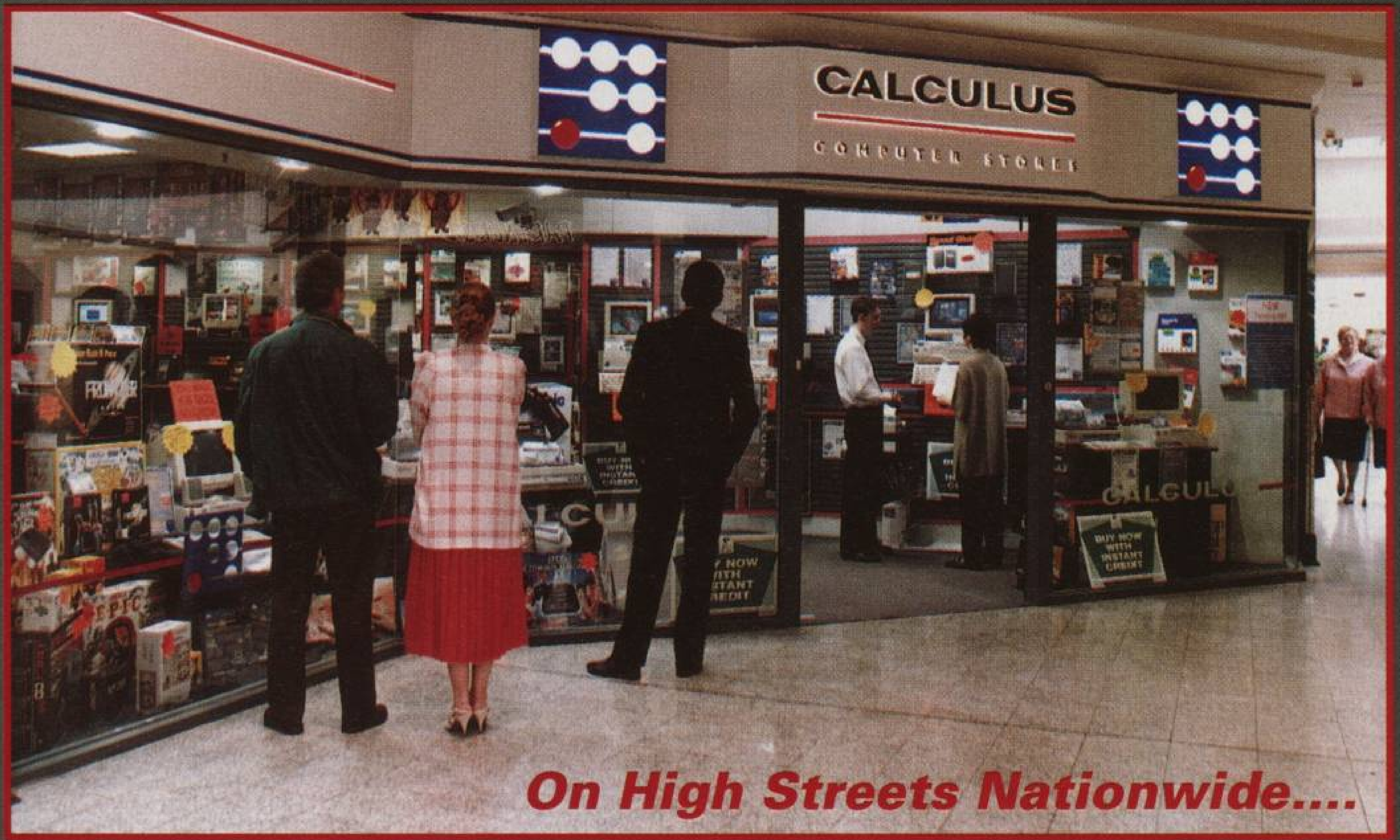
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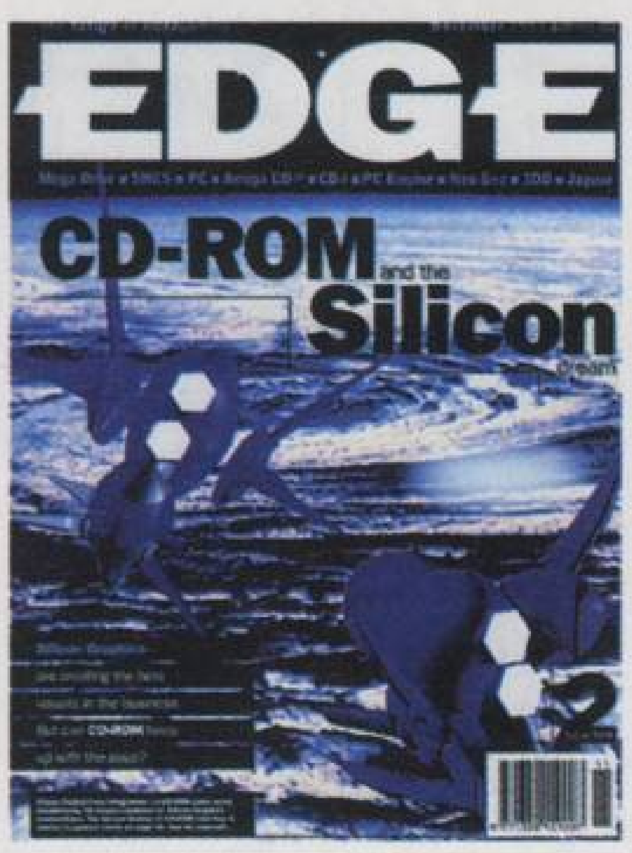
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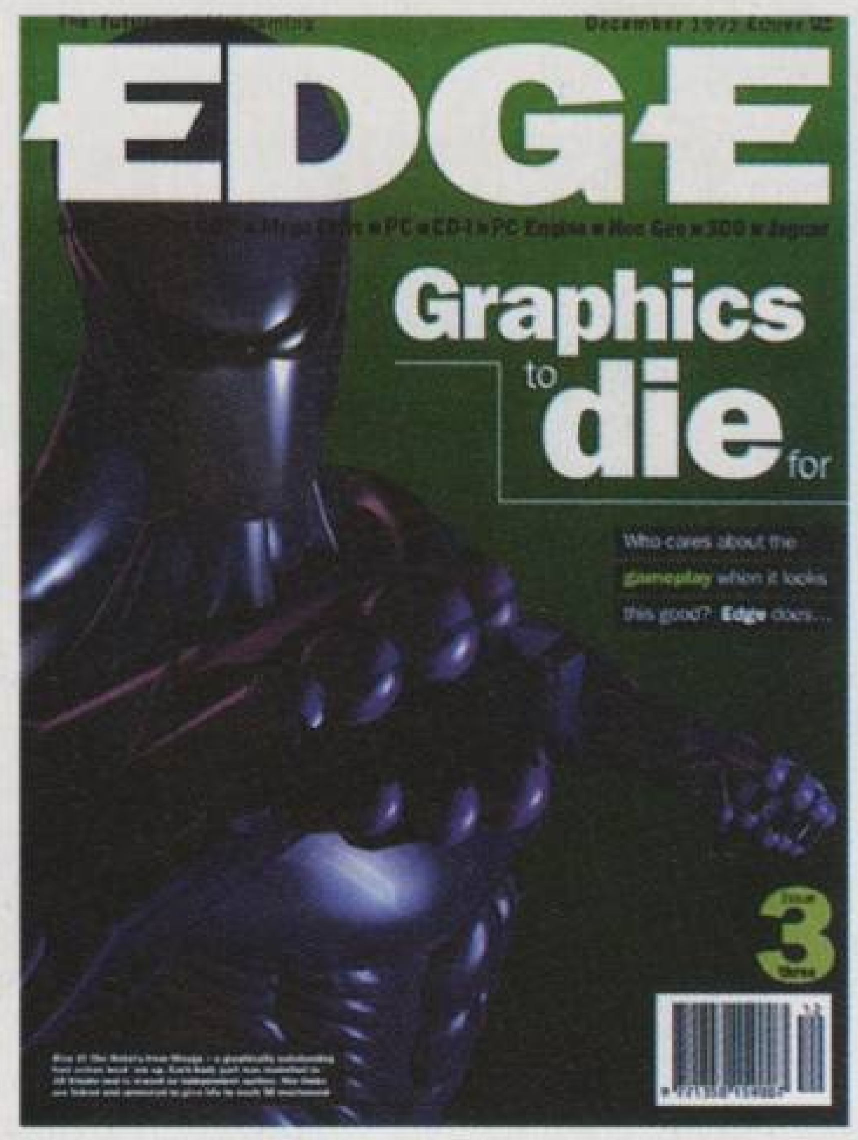
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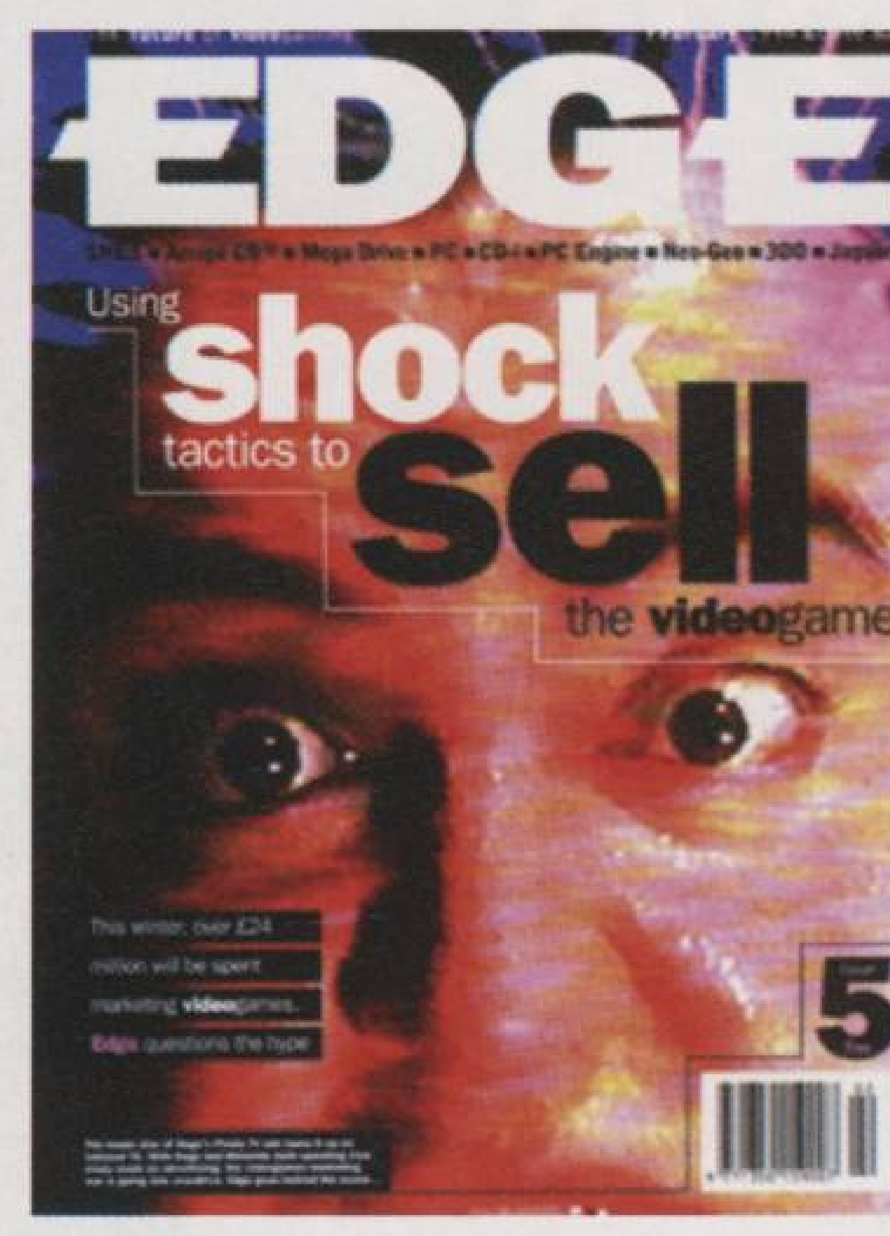
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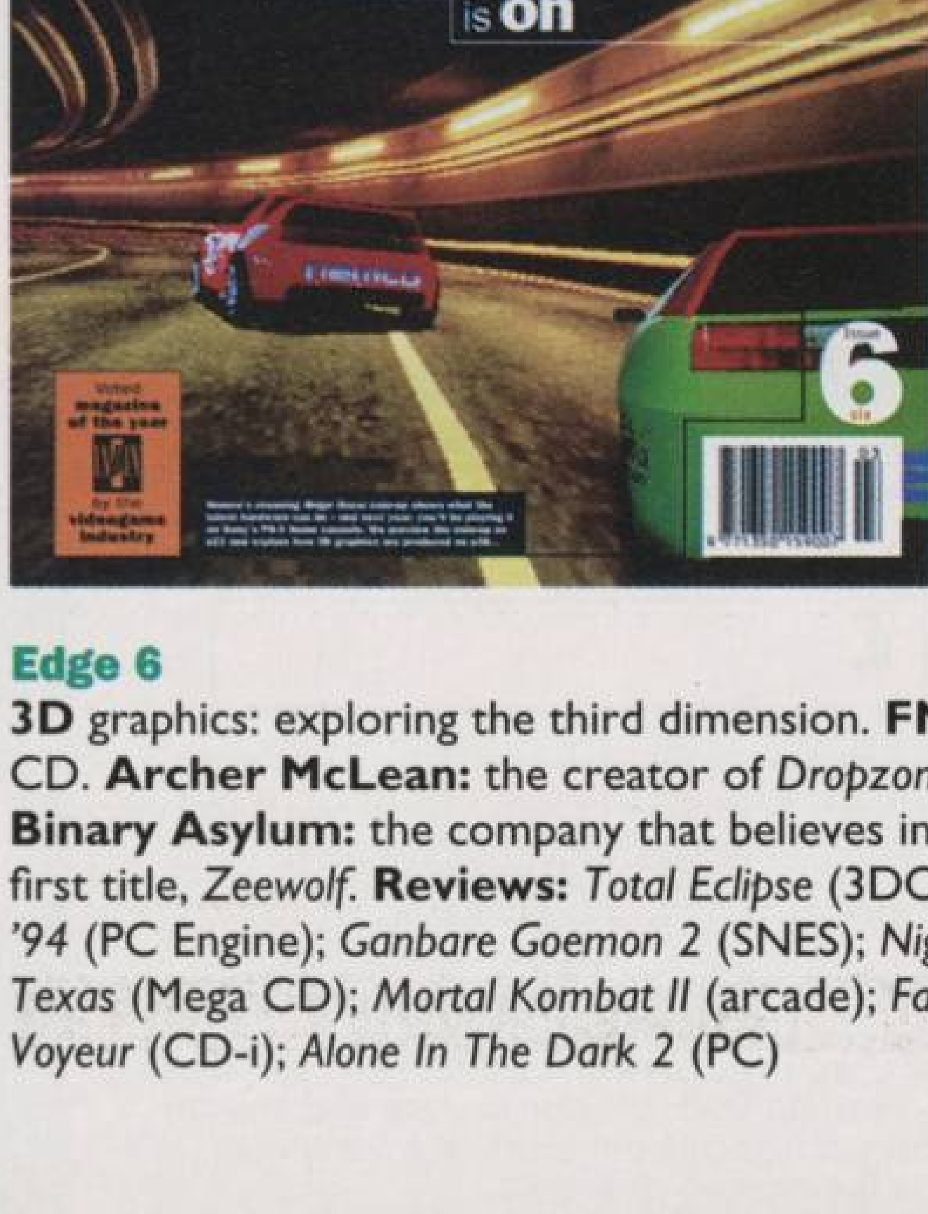
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PC Engine: the 8bit console that made a hit abroad but is still regarded as a cult in the UK. **Edge** talks to Peter Molyneux's **Bullfrog**, the company behind *Populous*, *Powermonger* and *Syndicate*, about their latest creations. **Reviews:** *Cybermorph* (Jaguar); *Secret Of Mana* (SNES); *Myst* (Macintosh CD-ROM); *Frontier: Elite II* (PC/Amiga); *Samurai Shodown* (Neo-Geo); *Dracula X* (PCE); *Aladdin* (SNES); *Joe Montana's NFL Football* (MCD); *Kether* (CD-i); *IndyCar* (PC)



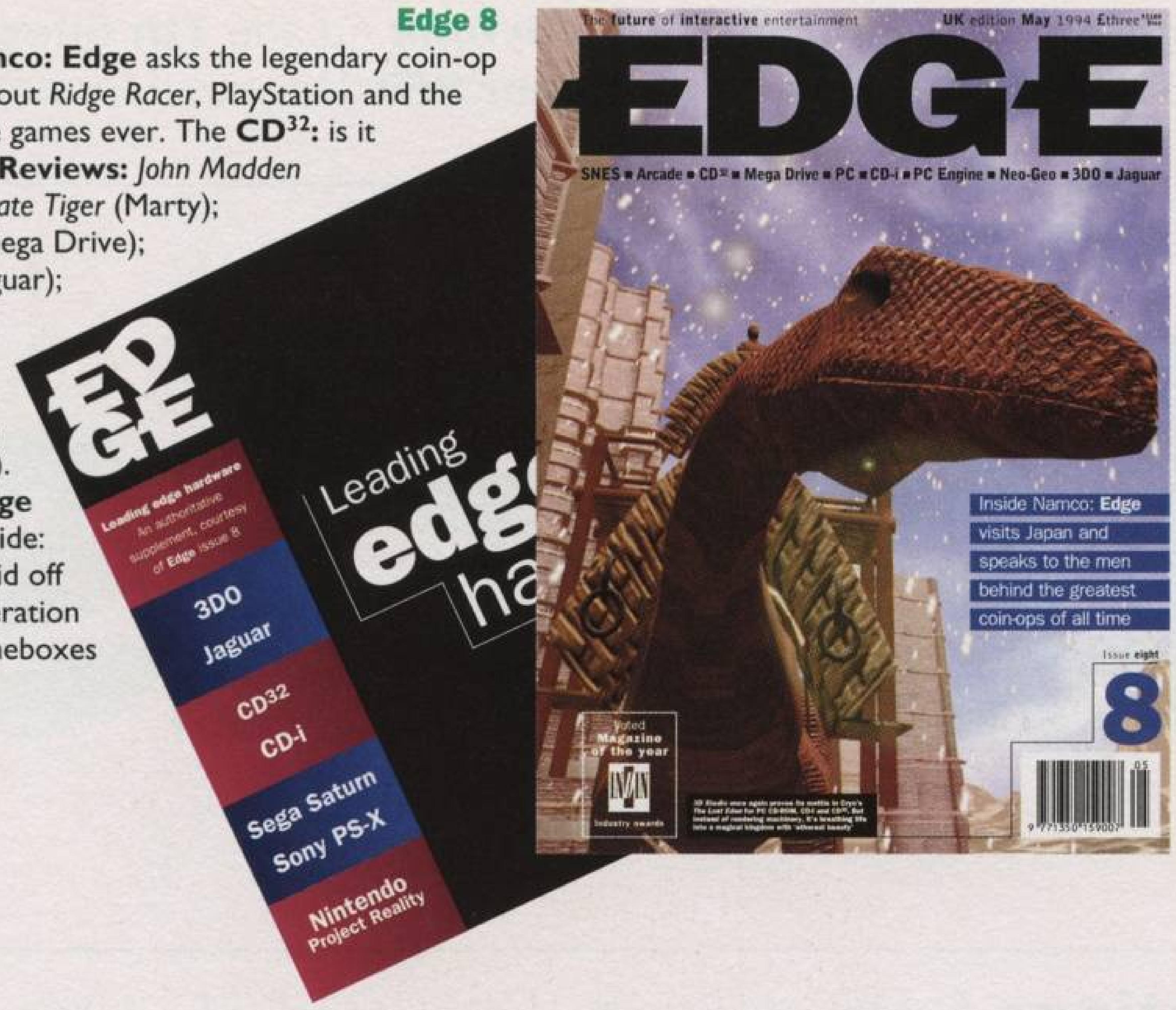
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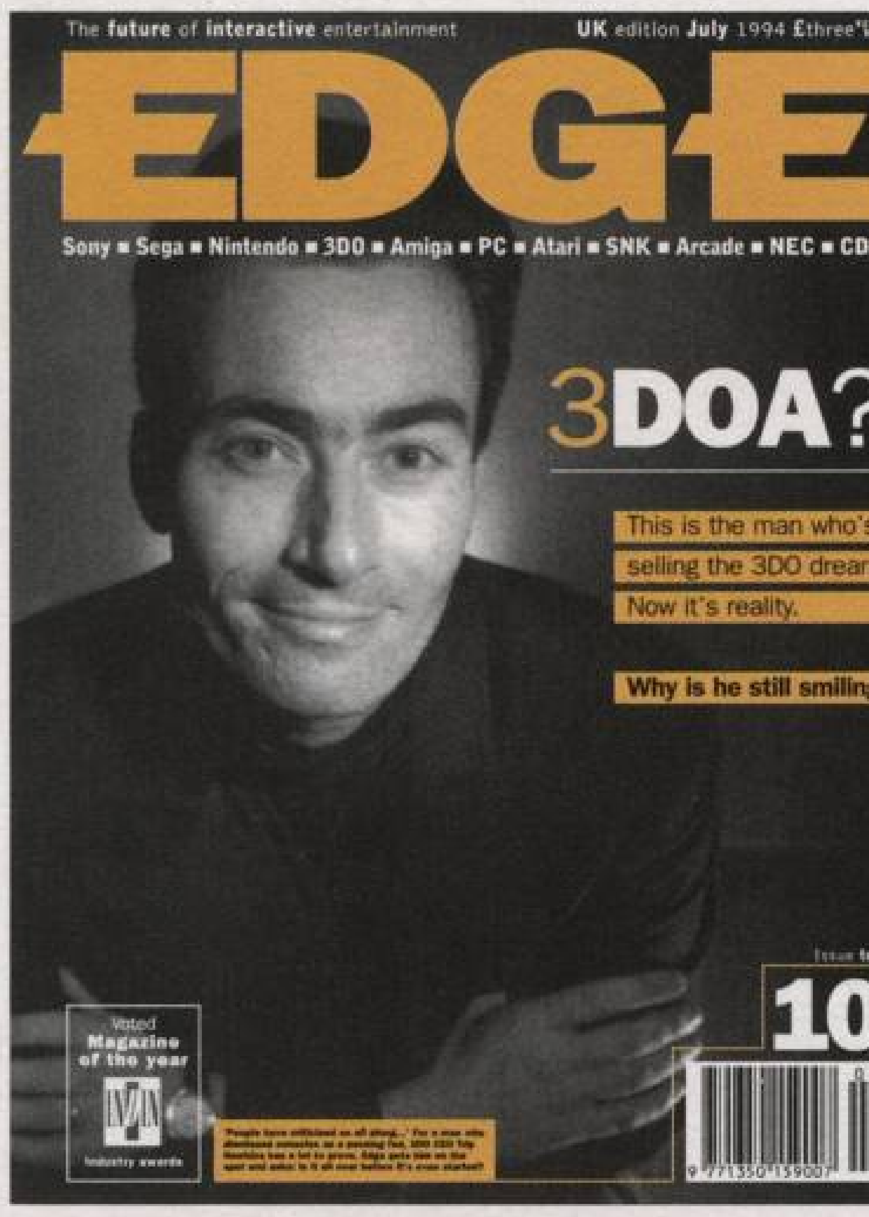


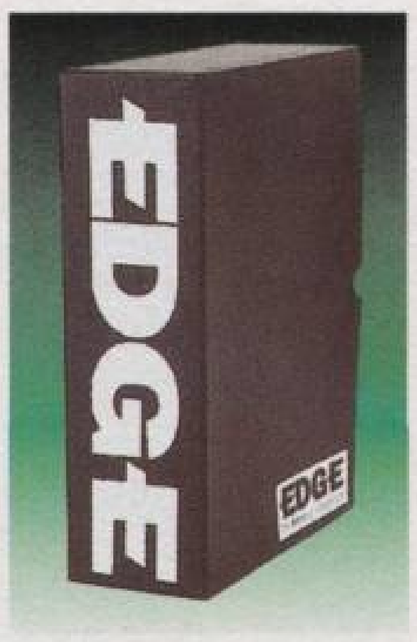
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Has the dream turned sour for **Trip Hawkins**? Out of **sync:** global incompatibility explored. **Reviews:** *SOS* (SNES); *Pacific Strike* (PC); *Super Wing Commander* (3DO); *Heavenly Symphony* (Mega CD); *The 7th Guest* (CD-i); *Windjammers* (Neo-Geo); *Flying Shark* (FM Towns Marty)

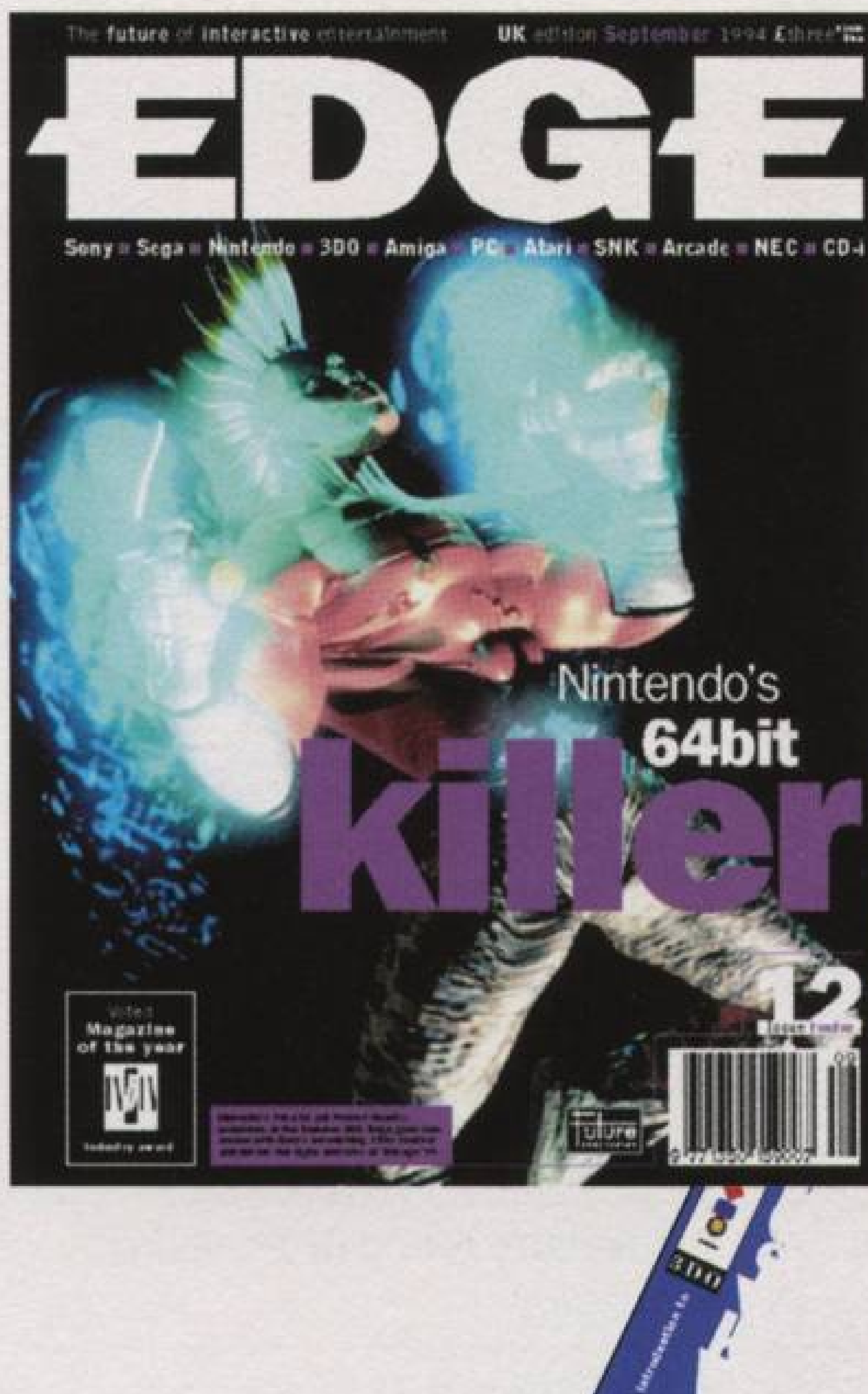




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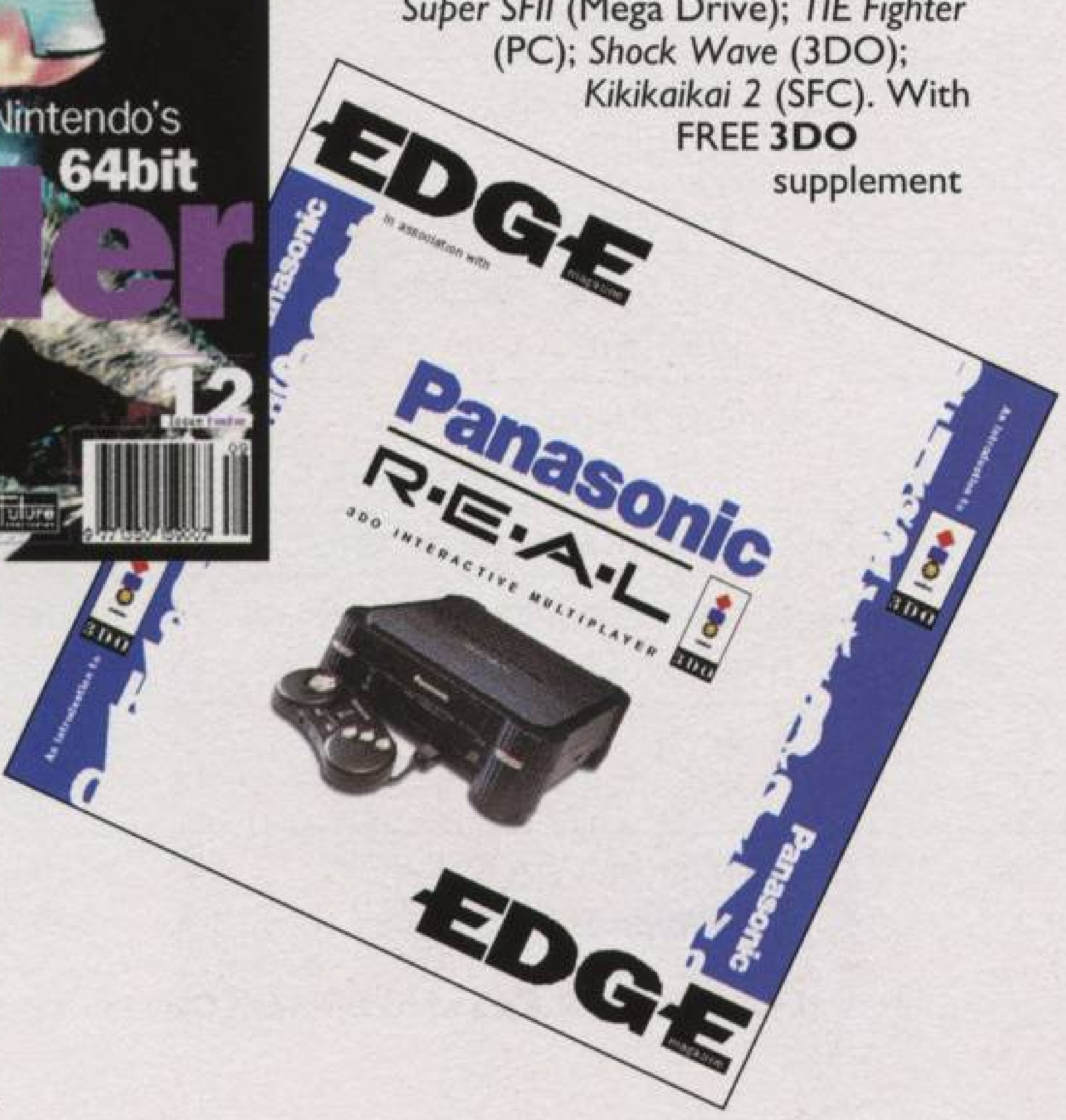
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The secret is out: **Edge** has first details of **Bulldog**, 3DO's answer to the PlayStation. **CES:** mammoth report on the show that resurrected Nintendo, featuring *Donkey Kong Country* for SNES plus news on *Killer Instinct* and *Cruisin' USA* for Ultra 64. The **rules** of the **game: Edge** explores the mysterious art of gameplay. **Reviews:** *Outpost* (PC); *Top Hunter* (Neo-Geo); *Wolfenstein* (Jaguar); *Super SFII* (Mega Drive); *TIE Fighter* (PC); *Shock Wave* (3DO); *Kikikaikai 2* (SFC). With FREE **3DO** supplement



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10. The Settlers *Microprose/Renegade*

US: all formats

1. **FIFA International Soccer** ***Electronic Arts (SNES)***
2. NBA Showdown *EA (SNES)*
3. MLBPA Baseball *EA (Genesis)*
4. NHL Hockey '94 *EA (Genesis)*
5. Andretti Racing *EA (Genesis)*
6. NBA Jam *Acclaim (SNES)*
7. Donkey Kong *Nintendo (Game Boy)*
8. Super Metroid *Nintendo (SNES)*
9. World Series Baseball *Sega (Genesis)*
10. Secret Of Mana *Square Soft (SNES)*

Amiga CD32

1. **Liberation** ***Mindscape***
2. Gunship 2000 *Microprose*
3. Heimdall 2 *Core Design*
4. Zool *Gremlin Graphics*
5. Fireforce *Ice*
6. Impossible Mission *Microprose*
7. Morph *Millennium*
8. Sensible Soccer '92/'93 *Renegade/Mindscape*
9. Ultimate Body Blows *Team 17*
10. Global Effect *Millennium*

Mega CD

1. **FIFA International Soccer** ***Electronic Arts***
2. Tomcat Alley *Sega*
3. Sensible Soccer *Renegade/Mindscape*
4. Wolfchild *Sega*
5. Ground Zero Texas *Sony Imagesoft*
6. World Cup USA '94 *US Gold*
7. Double Switch *Sega*
8. Sonic CD *Sega*
9. Silpheed *Sega*
10. Thunderhawk *Core Design*

PC CD-ROM

1. **Theme Park** ***Electronic Arts***
2. TFX *Ocean*
3. Rebel Assault *US Gold*
4. Encarta *Microsoft*
5. Day Of The Tentacle *US Gold*
6. The 7th Guest/Dune *Telstar Fun And Games*
7. Cyber Race *Cyberdreams*
8. Sam And Max Hit The Road *US Gold*
9. Myst *Electronic Arts*
10. Microsoft Art Gallery *Microsoft*

CD-i

1. **The 7th Guest** ***Philips***
2. Striker Pro *Philips*
3. Caesar's World Of Boxing *Philips*
4. Hotel Mario *Philips*
5. Dragon's Lair *Philips*
6. Voyeur *Philips*
7. Kether *Philips*
8. Caesar's World Of Gambling *Philips*
9. Defender Of The Crown *Philips*
10. Palm Springs Open *Philips*

UK charts courtesy of Gallup

Arcade: dedicated

1 **Daytona GP**
Sega

2 Ridge Racer
Namco

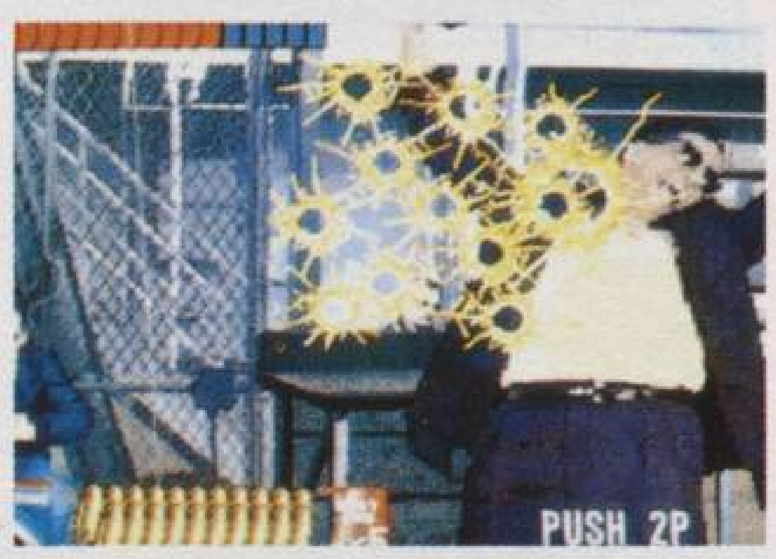
3 Lethal Enforcers II
Konami

4 Suzuka 8 Hours II
Namco

5 Virtua Racing
Sega







***Daytona GP* (top) is still king of the road, ahead of Namco's *Ridge Racer* (middle) and leaving Konami's shoot 'em up, *Lethal Enforcers II*, trailing in third place**

Japan: all formats

1 **Super Street Fighter II**
Capcom (SFC)

2 Dragon Ball Z
Bandai (Game Boy)

3 Wildtrax
Nintendo (SFC)

4 Super Bomberman 2
Hudson Soft (SFC)

5 Super Formation Soccer '94
Human (SFC)

6 Super Metroid
Nintendo (SFC)

7 Super Street Fighter II
Capcom (Mega Drive)

8 Final Fantasy VI
Square Soft (SFC)

9 Dragon Ball Z 3
Bandai (SFC)

10 Donkey Kong
Nintendo (Game Boy)





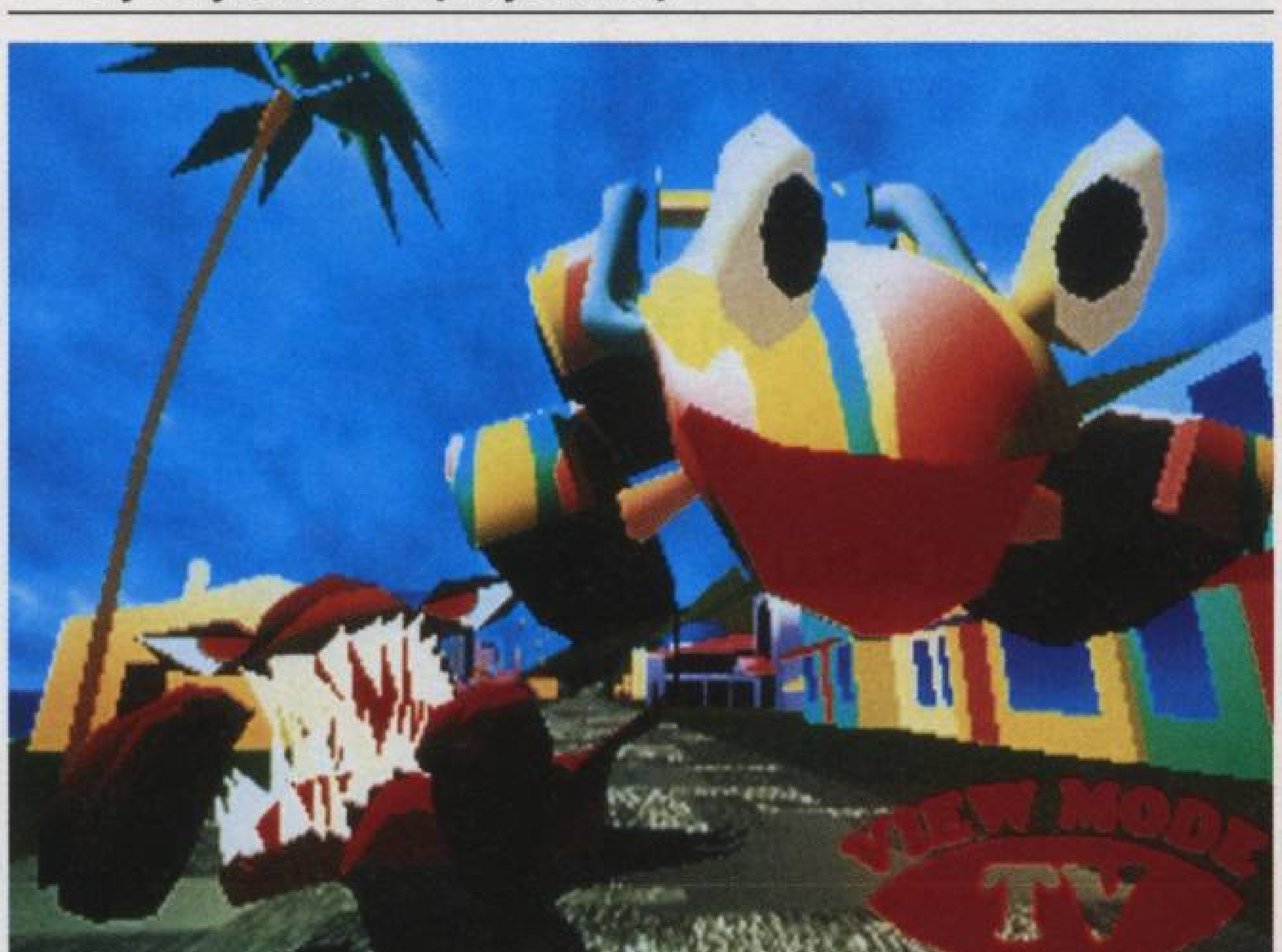


Unsurprisingly, Capcom's *Super SFII* (top) fights its way to the top of the heap only a few days after going on sale. *Wildtrax* (middle) falls two places, while *Super Formation Soccer '94* comes straight in at number five

Edge readers' most wanted

Which item of videogames hardware or software – real or vaporous – would you most like to get your hands on? Write to Edge Most Wanted, Edge, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW, and confess your greatest desires

1 Poly Poly Circus GP *(PlayStation)*



Running at 60 frames a second (and bearing a passing resemblance to Nintendo's *Wildtrax*), this racer from Sony Computer Entertainment will be available for the December launch of the PlayStation in Japan

2 Killer Instinct *(Ultra 64)*



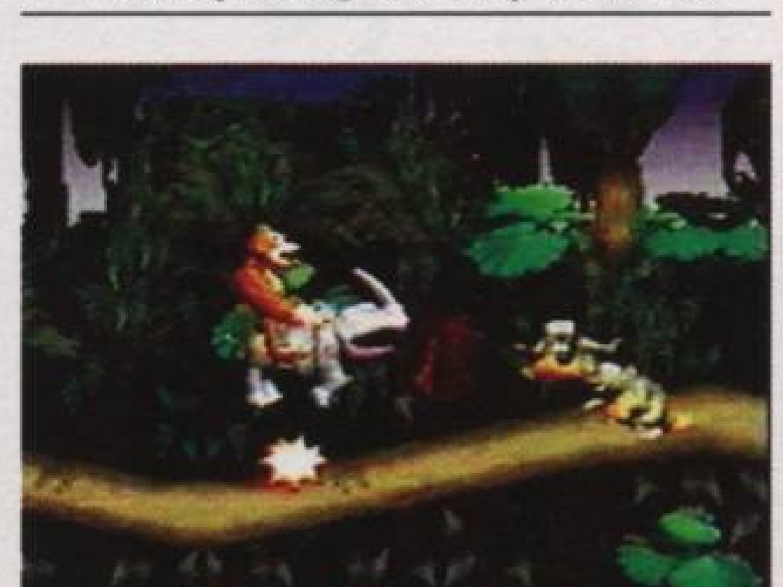
The 3D beat 'em up *Killer Instinct* is the first of a pair of Rare games in this month's chart

3 Iron Soldier *(Jaguar)*



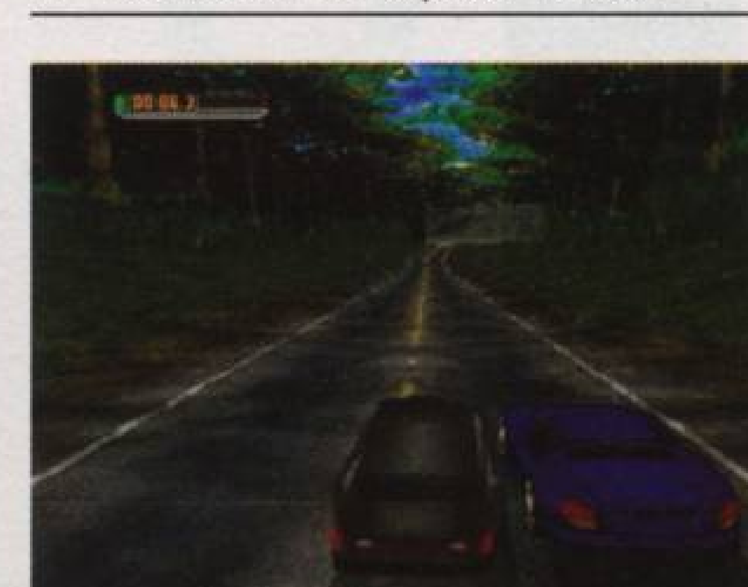
The German-developed *Iron Soldier* has become the game Jaguar owners really want to see

4 Donkey Kong Country *(SNES)*



Rare's second entry, *Donkey Kong Country*, shows just what the SNES can do when it's pushed

5 The Need For Speed *(3DO)*



The provisionally titled *The Need For Speed* is all set to become the definitive 3DO driving game

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Artwork by Rick Hoberg.

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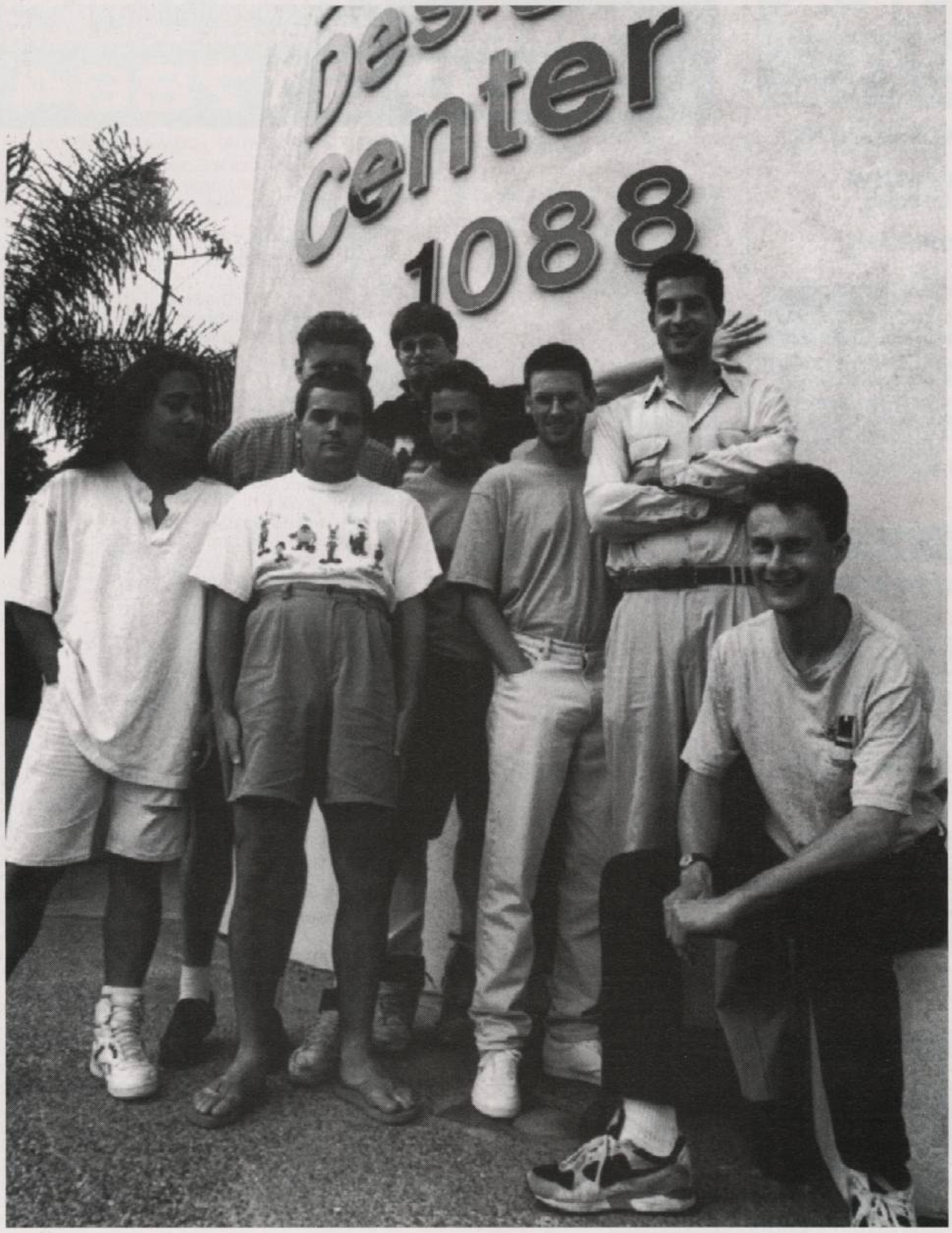
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An **audience** with…

Shiny Entertainment

With Shiny about to unleash *Earthworm Jim*, **Edge** spends some downtime on the SoCal codeshop's home turf

Although still in his 20s, Dave Perry, president of Shiny Entertainment, has had more success in the last two years than most programmers could hope for in a lifetime. He's now partaking of the fruits of that success. He lives with his girlfriend in a luxury apartment a short drive from Laguna Beach, southern California, and owns a $40,000 Mitsubishi sports car. However, prosperity hasn't diminished his drive in the slightest.

Big-selling Mega Drive hop 'n' shoot games like *Global Gladiators*, *Cool Spot* and *Aladdin* (that one with the help of 30 artists on loan from Disney) have established this six-foot-plus programmer as a hit machine for console games. Dave started his career at Fergus McGovern's UK base, Probe Software – a well-respected game stable – along with many of his new team. He subsequently joined Virgin, but after the completion of *Aladdin*, which netted him enough funds to go it alone, he left to start his own company, taking Virgin colleagues with him. And so Shiny was born.

Earthworm Jim is Shiny's first creation. Dave Perry is programming the Mega Drive version, while ex-Probe coder Nick Jones (the programmer of *Alien³* on the SNES) handles the SNES game. Other former Probe talent comes in the form of art director Nick Bruty and lead artist Steve Crow. Shiny can also call on the talents of animation director Mike Dietz and animators Edward Schofield and Doug TenNapel (the designer of the *Earthworm Jim* character). US toy giant Playmates (of Ninja Turtles fame) are investing heavily in *Earthworm Jim* and a TV series is planned.

Edge How did the team come together?
Dave Perry We had six headhunters continually touring the world [laughs]. What I said to them was, 'I want the best in the world that you can find in each field', and they sent them all here. I keep saying there's no need for more people, but we keep hiring more. We're trying to get Mr Katzenberg [Disney CEO]…
Edge How successful do you think *Earthworm Jim* is going to be for you?
Dave If we can get everything to fall into

place the way it has to date, we will have, no matter what, a successful character. The fact is, the people we're using have the potential to take it all the way to Turtles standard. It's all down to the public now. If the public like him, we've got a huge success. If they don't, then we don't. We haven't tried to make up exactly what people want. We haven't sat there and just made him all bland. He's designed to be cool. Basically, Shiny are backing him all the way because he has all the features to make him a cool thing for 1995.

Edge What plans do you have for him?

Dave We're not just making one game and saying, that's the end of it. We're getting involved with a television series. And we're not just giving it the okay; we will be actively involved. We're actively involved in designing toys and we have other irons in the fire too. I get continuous offers to use our guys as graphics consultants for other things, for other people's projects, which means that we know about all the cool new things that are coming out. For example, the *Taos* operating system – I have that here, and we have it running.



Photographs: **Tony Le Mesmer**

Shiny happy people (from top): Dave Perry, Tom Tanaka (level designer), Mike Dietz (animation director), Edward Schofield (animator), Nick Bruty (art director), Nick Jones (programmer), Steve Crow (lead artist), Doug TenNapel (animator). Plus Andy Astor (assistant programmer)

Edge So are you hoping for a lot of overlap between formats?

Dave We're trying to create a lot of very valuable source. We've got filing cabinets weighing two tons, full of all our animations. They're protected from bombs and from fire, and no-one can steal them because they'd need a fork-lift truck to get them out. These cabinets contains all the animations, which cost quite a lot of money to develop. They're of a much higher quality than we need, so we can use them for the Saturn, PlayStation or Ultra 64.

Edge What do you think is the key to great animation?

Dave Most people would look at most of the stuff we get sent in by freelancers and say it's brilliant. But when you really look at it, it often lacks that sense of realism, which is the main thing animators should be trying to achieve. Scissors are heavy, so you want to see heavy scissors walking across the table when someone animates them. The table bending under their weight – that kind of thing. Animotion is the process we use to get paper onto computer. Everyone had a go when it was new. We had terrible results at first, then okay results, and then final results that we thought were great. The thing is, with *Aladdin* it still took 30 Disney people to colour everything we got, but we've set it up differently here to do away with most of those people. We didn't know if this was going to work at first.

Edge How long will you continue using animation techniques like this?

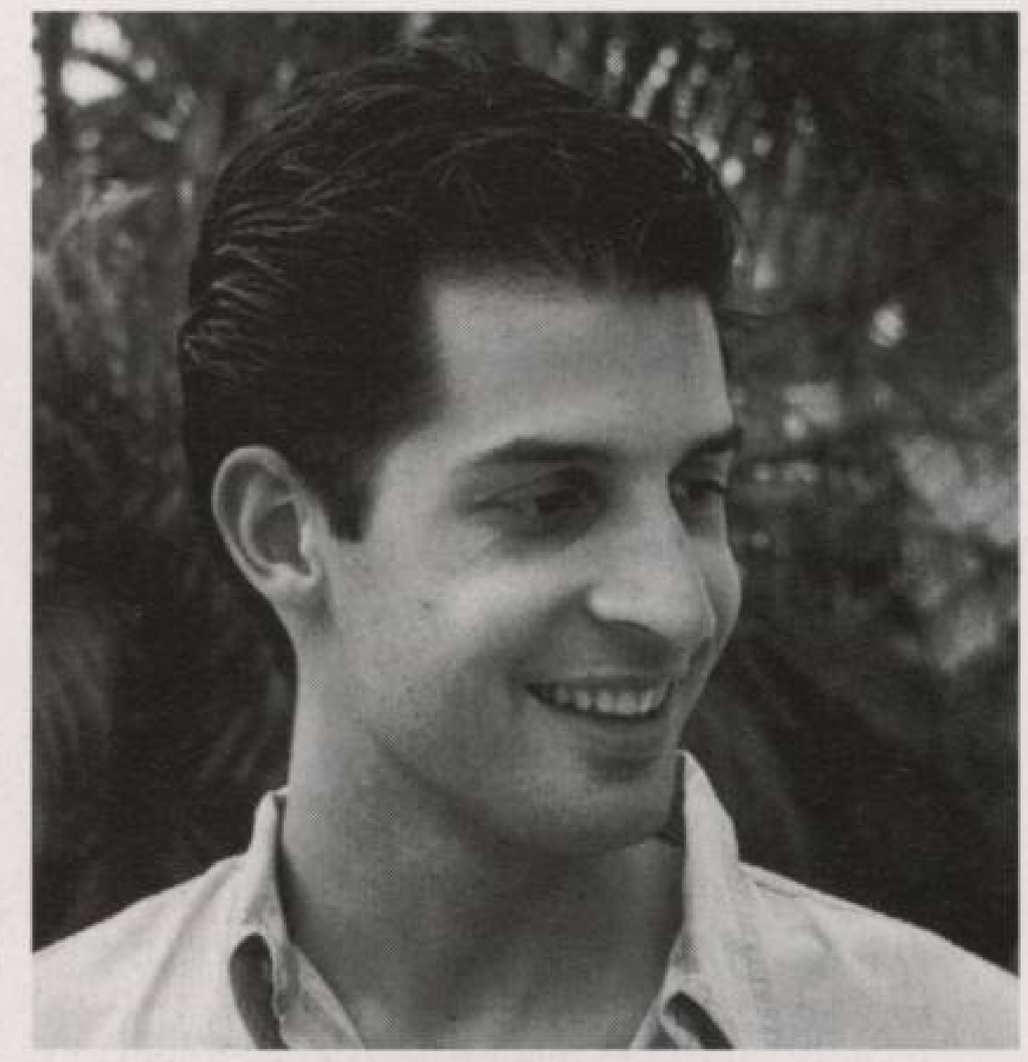
Dave Until they stop using pixel-based computers! The trick we use, and it's no real secret, is that we move things by less than a pixel. It may sound impossible when using a computer, but using anti-aliasing you can get that subtlety. These guys here are able to achieve movement so smooth it's just ridiculous. And it's this subtlety that gives Jim his character. There are no lines on his body. As his body twists, even if his knee wouldn't have moved a pixel, you'd still see it move half a pixel.



'We use 3D as a tool. We don't just use it as a gimmick. Our game has both digitised effects and rendered stuff'

Edge What about polygon animation?

Dave I don't see the need for it at the moment except for specific tasks when you need polygons for certain situations. At the moment there's this trend to do things like



Shiny's Dave Perry is confident that *Earthworm Jim* will be genuinely different

Alone In The Dark and *Out Of This World*. They use polygons because it's the cheapest way to store their style of graphics, whereas we're storing our graphics in the same form of memory but using compression techniques to give fully shaded 3D characters. It's a personal choice, but even if their compression was better I'd still choose pre-rendered characters over characters constructed out of four squares.

Edge What about inbetweening, the technique Nintendo are pushing with Ultra 64? Is that ever going to take over as the standard form of animation?

MIke Dietz The problem is that the computer will always take the most logical choice, which is rarely the best choice. If there was software good enough to inbetween key frames of animation properly, then it figures that Disney would already be using it.

Doug TenNapel And they're not. If it was smart enough to inbetween, you wouldn't need the animator at all. It's absolutely impossible – it's simply not going to happen.

Nick Bruty After you've edited all the possible variables, it would be quicker just to animate it. Doug could flash out 10 feet of animation in the time it would take to build the 3D model of the head of one of the characters.

Dave We're not giving up, though. We're trying to form a partnership with SoftImage to do specialised tools for Shiny. If we can get a relationship going with them, then we

Continued next page

can advertise them while they help us. People will generally do anything to make their lives easier.

Edge What do you think of Nintendo's Alias-rendered animation?

Dave If you look at *Donkey Kong Country*, you wonder just how much Nintendo actually had to do with it. There is still no sense of humour and I don't think it will entertain young children like *Aladdin* did.

Doug I think the public should feel betrayed by *Donkey Kong Country* (laughs). They've turned him into Mario! I'm disappointed with the gameplay, but I think it will probably put Nintendo back on the map because it looks beautiful. They have a cool 3D tool but they're not really doing anything special. We use 3D as a tool. We don't just use it as a gimmick. I think a good example is that our game has both digitised effects and rendered stuff, and we can increase or decrease any percentage of either at any time.

Edge Are there noticeable differences between the SNES and Mega Drive versions of *Earthworm Jim*?

Nick Jones There are obvious colour differences and there are some special effects in the SNES version that the Genesis hardware just can't handle – things



***Earthworm Jim* boasts spectacular scrolling effects and some great gameplay (Mega Drive shot)**

like the glare from the sun's rays when it appears from behind a cloud. We're really happy with things like that.

Dave We've got a system that can develop simultaneously on both systems and a programmer who can fix bugs in a minute on both. It's close to how *Taos* works – it's not binary-compatible but it's code-compatible. We can work on separate levels and update them simultaneously.

Edge When will the game be finished?

Dave We've got about 15 days until submission. We're working 12 hours a day minimum – if we're not sleeping we're here. You guys are the last people to come through that door. We're trying to get it out before *Donkey Kong Country* or *Sonic 4*.

Edge What's your favourite game?

Dave *Doom* on network. I had to write a program to check if there were copies on the network. I came in in the morning and everything would be quiet – they would already be playing it. I have to actually hide the good games in a cupboard now.

Edge Are you looking forward to the new console formats?

Dave On the release of each one there'll be ten fighting games, ten flight sims, ten of everything… Every genre has been done to death and so we have a new genre planned that has not been done before. We can start getting actual character across with these new machines.

Edge Sega seem to be losing adherents…

Mike That's because there's an illusion that *Daytona* and Saturn are the same thing. When gamesplayers find out they're not, I think they'll be massively disappointed. Expectations are still too high.



Doug We still prefer Sega's games to anyone else's, though.

Edge What, in preference to Nintendo's?

Mike Oh yeah, *Virtua Racing*, *Virtua Fighter*. Nintendo just can't do this stuff.

Edge What about Sony's plans?

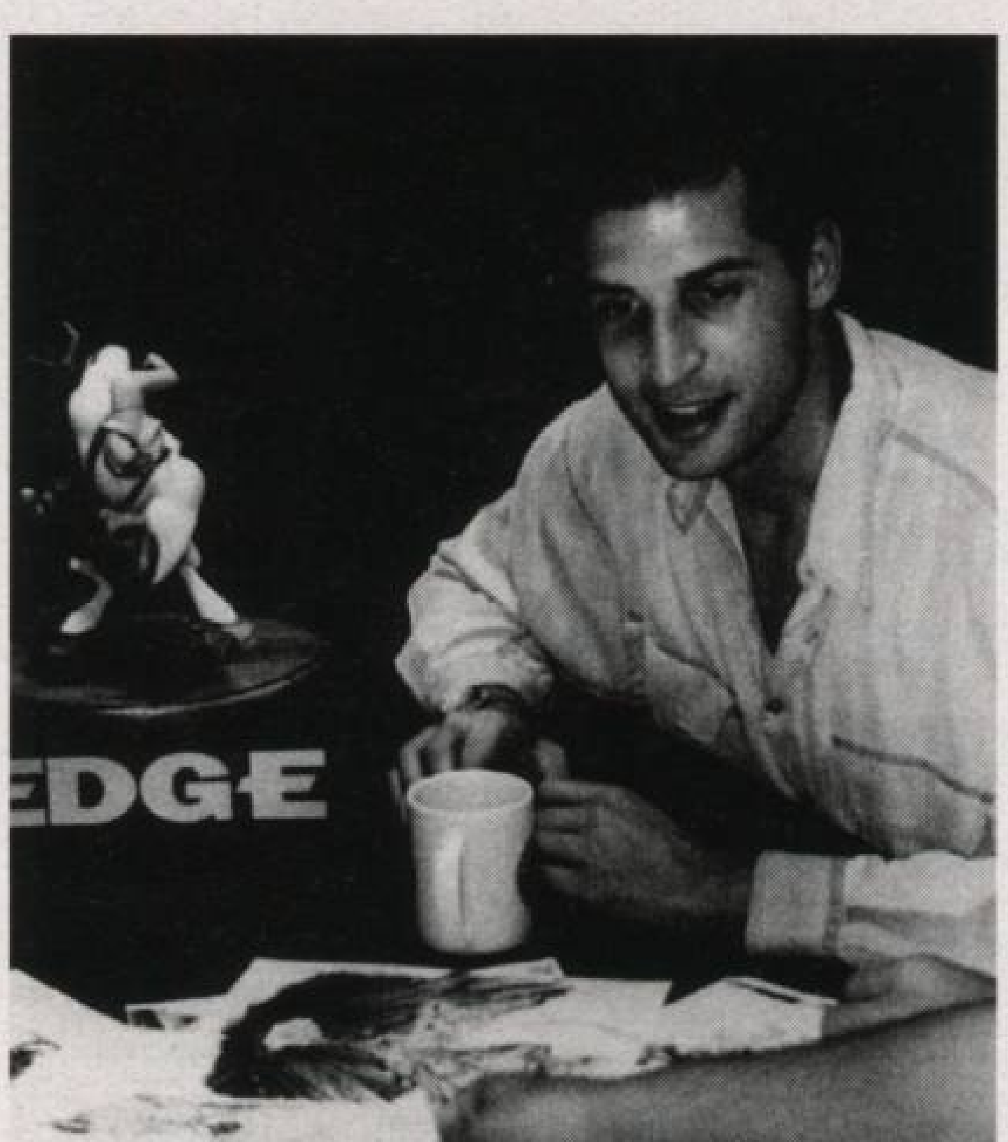
Dave We wish we knew what they were. They have the best hardware – it's the best we've ever seen. They're still keeping things very quiet in the States, though.

Edge Are you going to continue with character-based games?

Dave We've only specialised in them in the last couple of years anyway. The fact that computers are becoming more powerful will inevitably mean that characters come more to the fore. The games we have planned are not just platform games. We're not just going into rendered worlds either – we're not going to render everything. We have ideas and test stuff that will create a new genre of game, a new style of game that will hopefully cause a lot of that style to be done by other people as well. And while giving you full control of the game the whole time. We're called Shiny Entertainment, not Shiny Interactive or anything. We want to make games you can control like any other. Don't worry, we have some stuff that **Edge** will love [laughs].



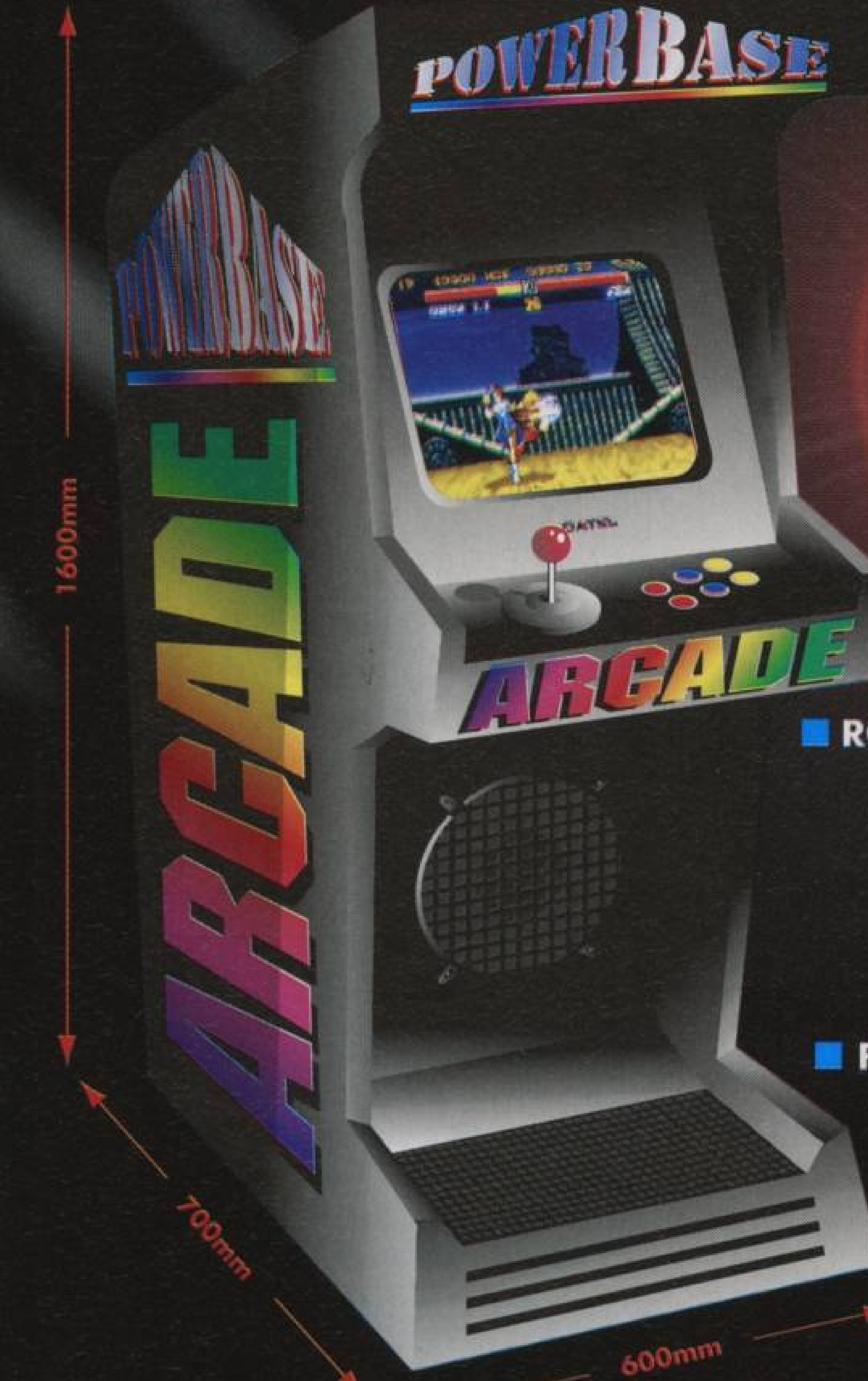
'Every genre has been done to death. We have a new genre planned that has not been done before'





Dave Perry (top): 'These guys achieve movement so smooth it's ridiculous. It's this subtlety that gives Jim his character'

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Q&A

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Q I am a network *Doom* freak and I spend a disturbing amount of time playing the multiplayer game over my college's Novell network, where I've installed the full version. I have some network-related questions.
1. If I have a modem connected to my PC and the full version of *Doom*, how can I play multiplayer *Doom* with another person in another country? Does the speed of the modem affect the speed of *Doom* when I play it over the Internet? If so, which modem speed do you think I should get in order to run *Doom* smoothly?
2. How much will it cost per hour to play *Doom* over the Internet with another person?
3. Do you know when *Doom II* is coming out, and if it will have a network play feature?
4. Do you know of any other multiplayer PC games that I can spend the rest of my life playing?

'Network *Doom* King', Hertfordshire

A **1.** The network version of *Doom* uses the IPX protocol to transmit 'packets' of data to and from individual machines via a central fileserver. To achieve this you need an Ethernet card, which, at its simplest, is a highly efficient modem substitute. As far as **Edge** knows, you can't play *Doom* over the Internet, but it is technically possible to play via a direct modem link with another computer. This is often impractical, though, due to the transmission delay. On a network consisting of a few hundred metres of cable the delay is negligible, but playing with someone in Australia, for example, would cause insurmountable problems.
2. If you could use the Internet to play *Doom* it would cost you nothing – colleges pay for unlimited use of Internet lines in advance. A direct modem link, on the other hand, especially over long distances or during peak times, could wreak havoc on your phone bill.
3. *Doom II: Hell On Earth* is scheduled for release on October 8 as a fullprice, network-compatible game.
4. There are many other multiplayer PC games. Ocean's *F29 Retaliator* is a few years old now but still fast enough to be fun with two players, and Geoff Crammond's *F1 Grand Prix* is a superb multiplayer experience.



Saturn *VF*: arcade perfect? (See Horness Spencer's letter)

Q I would be grateful if you could answer a few select questions about the Sega Saturn.
1. With the addition of a cartridge port on the Saturn, would it be possible to make future hardware improvements within a cartridge and, by running both CD and cartridge simultaneously, allow things like saves and high scores, etc?
2. The specifications of the Saturn are close to that of the Super 32X add-on for the Mega Drive. Are Sega planning to make the Saturn downwardly compatible with the 32X?
3. In the **Edge** supplement you stated that 900,000 polygons/sec, Gouraud shading and texture mapping were possible on the Saturn, whereas in issue 11 you stated that the Saturn was only capable of 90,000 to 100,000 polygons/sec. Why the sudden loss of 810,000 polygons/sec?
4. In the *Virtua Fighter* article in **Edge** 11 it was apparent that Sega are struggling to convert their *Virtua Fighter* coin-op to the Saturn. If this is the case, the specifications cannot be as close to the Model 1 arcade board as first expected, and judging by the specification difference between this and Model 2, *Daytona* would be practically impossible to convert. What are your views on 'arcade-perfect' conversions for the Saturn; given the machine's specifications, do you think they are possible?

Horness Spencer, Redditch

A **1.** The Saturn's cartridge slot – which allows direct access to the CPU and the rest of the architecture – will be useful for developers when the final machine ships. Not only could it be used for saving game data, but it will make possible the release of upgrade cartridges in the future.
2. Not officially, but it's possible that a cartridge will be released that allows Super 32X games to be played on the Saturn – like the Mega Drive runs Master System games using the Power Base converter.
3. A Japanese Mega Drive magazine was the first source to state that the machine could handle 900,000 polygons. Either **Edge** – along with many others – translated the number incorrectly (mistaking thousands for tens of thousands), or the mag in question simply got it wrong. To this day Sega haven't announced a polygon rendering figure for Saturn, and if they did, just how accurate would it be? Without a benchmark for polygon size and detail etc, it's not an absolute measurement of system performance.
4. Sega's Model 1 board is a high-performance dedicated polygon shifter with two layers of background scrolling; Saturn is a multipurpose games system which offers polygon rendering, sprites, scaling, video and many other features, thus allowing a wide variety of games. While Saturn's polygon rate might not match that of the coin-op board – it's possible that it can manages half Model 1's performance – Sega are hoping that improvements like texture mapping and shading will make up for that. (AM2 supremo Hiroshi Suzuki said as much in **Edge** 11, with specific reference to *Virtua Fighter.*) Now that we have a clearer idea of what Sega's hardware is capable of, it would be foolish to expect a perfect *Daytona* – there's a huge difference in 3D performance between Model 2 and Saturn.



Can you enhance the network *Doom* experience by playing with someone in another country? (See letter from 'Network *Doom* King')



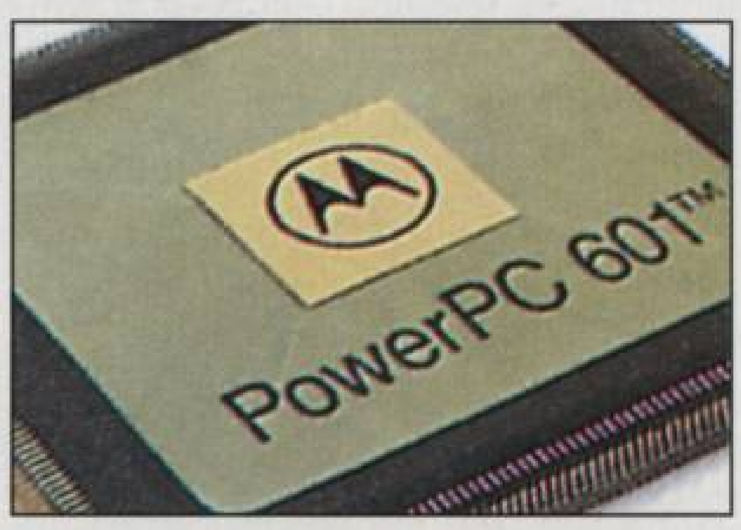
Samurai Shodown **will be one of the first Neo-Geo CD games. Is the end in sight for the Neo-Geo cartridge system? (See Jon Mills' letter)**

Q **1.** What is the price difference between 3DOs in Europe and America? Should I buy a European or an American 3DO?
2. Trip Hawkins said that there would be a big difference between the 1994 and 1995 3DOs. In what way?

**Marios Neocleous,
Limassol, Cyprus**

A **1.** Panasonic have bitten the bullet and announced that, despite outrageously high customs duties (under current import rules the system is classed as a VCR), they're bringing the system into the UK for £400, packaged with the stunning-looking but unplayable *Total Eclipse*. It's worth noting that the US bundled game, *Crash 'n Burn*, won't be available in the UK – apparently the 50Hz frequency of the PAL machine meant a particularly tricky bit of recoding for Crystal Dynamics and would have resulted in an unacceptably low frame rate. The 3DO Company have stipulated that thirdparty developers should reconfigure titles to run at an optimum speed and screen size in the UK – remember, imported US and Japanese titles will only run in letterbox format on the UK machine – so let's hope American and Japanese developers don't face too many problems making UK 3DO games just as impressive as the foreign versions.
2. 3DO's 1995 system, Bulldog, was uncovered in **Edge** 12. It boasts a 64bit RISC processor (66MHz), dedicated polygon handling (240,000/sec), and will come as both an upgrade for the existing 3DO and a fully fledged new system costing in the region of $250-400. Not bad, eh?

Q **1.** In a previous issue, you said there might be compatibility problems between Japanese games and the US 3DO – it had something to do with Kanji characters. Why is this, and was *Dr Hauzer* affected? There doesn't seem to be the same problem with Japanese SNES games.



The PowerPC chip is still a rare beast (see M Saunders' letter)

2. Which NTSC-PAL converter offers the best value, ie picture quality vs price. Where can you buy one? Is it possible to get an RGB signal directly from 3DO. And what about the PlayStation? Does it have RGB output?

**Jari Turunen,
Finland**

A **1.** The 3DO Company itself informed **Edge** of potential difficulties, claiming that the Japanese machine has a ROM chip for Kanji characters. However, **Edge** has had no problems running any imported Japanese software on the US machine, and that includes the Kanji-filled *Kyoto Mystery*, *Wacky Races*, *Takeru* and *Doctor Hauzer*.
2. No RGB signal can be obtained from the US or Japanese Panasonic 3DO. Most suppliers of 3DO machines will stock an S-Video/SCART converter box. Try one of the mail order companies advertising this month or in a previous issue. The Japanese PlayStation will only provide NTSC RF, Composite and S-Video signals – Japanese TVs rarely use the SCART RGB connection.

Q **1.** In issue 11 you reviewed the Neo-Geo CD machine. You pointed out that it is not an add-on and that the games will retail at £40. Does this mean that I have been wasting loads of money on £150 cartridges?
2. Will the games for the CD-ROM be better and more advanced than the cart games?
3. Does this mean that SNK will no longer concentrate on the cartridge system, because if this is so quite a few people will have redundant consoles?

**Jon Mills,
Sheffield**

A **1.** The advent of the Neo-Geo CD system is naturally causing concern among UK owners of the original home system, especially as in Japan there's a tradition of dumping an old system (often literally) to make way for the latest model. SNK were unable to design an upgrade because of the lack of video RAM in the base unit. The Neo-Geo CD includes an extra 430K of video RAM, 7Mb of DRAM and 64K of SRAM. Great kit, but hardly fair to loyal Neo-Geo owners, is it?
2. No, as far as we can tell they'll be identical to cartridge games.
3. SNK are claiming that cartridges will continue to be made available alongside CD-ROM and arcade software.

Q **1.** All the PowerPC machines I have seen are Macs which emulate *MS-DOS*. Can you get PowerPC PCs which emulate Macs instead?
2. I've heard that the 601 processor in the Power PC doesn't emulate *MS-DOS* very well. Is that true, and if so, is there any alternative to the 601?
3. Can a PowerPC machine with a 601 processor run *Doom* well – in other words, smoothly?

**M Saunders,
Orpington**

A **1.** The PowerPC is a new RISC chip that is intended to be used in both PCs and Macs – the idea is that it will eventually replace Intel silicon (even the entry-level 601 chip is faster than a 60MHz Pentium). Programs running on PowerPC-based machines fall into two categories: 'native' applications, recoded specifically for the PowerPC's instruction set to provide optimum performance; and traditional PC or Mac programs running via emulation software. If the PowerPC penetrates the market to the extent that its developers (Apple, IBM and Motorola) intend, all PC and Mac programs (including *MS-DOS* and *Windows*) will be recompiled for the PowerPC, making Macintosh and PC software interchangeable. At the moment, though, the PowerPC market is cornered by Apple, with several 'Power Macs' available and a growing number of native applications. This means that *MS-DOS* or *Windows* users are restricted to running programs under emulation on Apple-branded machines.
2. The 601 PowerPC processor runs *MS-DOS* under emulation at about the same speed as a 25MHz 486sx system. The forthcoming 603 and 604 chips will be faster.
3. Buying a PowerPC system purely for games is not advisable: PowerPC-specific titles are still virtually unheard of and many existing games will not run perfectly under emulation.

Q and A

You can rely on Edge to cut through the technobabble and give you straight answers. Write to: Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW, You can fax us on 0225 338236, or e-mail us via future@cix.compulink.co.uk. with a subject line 'ATTN: Jason Brookes'. Sorry, but we cannot answer any questions personally, either over the phone or by post.

over the edge

Next month

Amazing STUDIO

Next month Edge ventures across the Channel to savour the French art of 3D animation and game design. First port of call is Paris-based Amazing Studio, home of top designers Eric Chahi (*Out Of This World*) and Frederic Savoir (*Flashback*) Here Edge will get the first ever look at the long-awaited – and highly secret – *Heart Of Darkness*. Then, after catching up once again with Cryo Interactive, this time for a look at *Captain Blood* sequel *Commander Blood*, Edge shoots down to Lyons on the TGV to see Infogrames and *Alone In The Dark 3*. Last stop on Edge's tour de France is Adeline, creators of *Little Big Adventure*. À bientôt.

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